

# American Forests *and* Forest Life



August 1930

# The American Forestry Association

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## What the Association Is Working For

ADEQUATE FOREST FIRE PROTECTION by federal, state, and other agencies, individually and in cooperation; the REFORESTATION OF DENUDED LANDS, chiefly valuable for timber production or the protection of stream-flow; more extensive PLANTING OF TREES by individuals, companies, municipalities, states, and the federal government; the ELIMINATION OF WASTE in the manufacture and consumption of lumber and forest products; the advancement of SOUND REMEDIAL FOREST LEGISLATION.

The ESTABLISHMENT OF NATIONAL AND STATE FORESTS where local and national interests show them to be desirable; the CONSERVATIVE MANAGEMENT OF PUBLIC AND PRIVATE FORESTS so that they may best serve the permanent needs of our citizens; the development of COMMUNITY FORESTS.

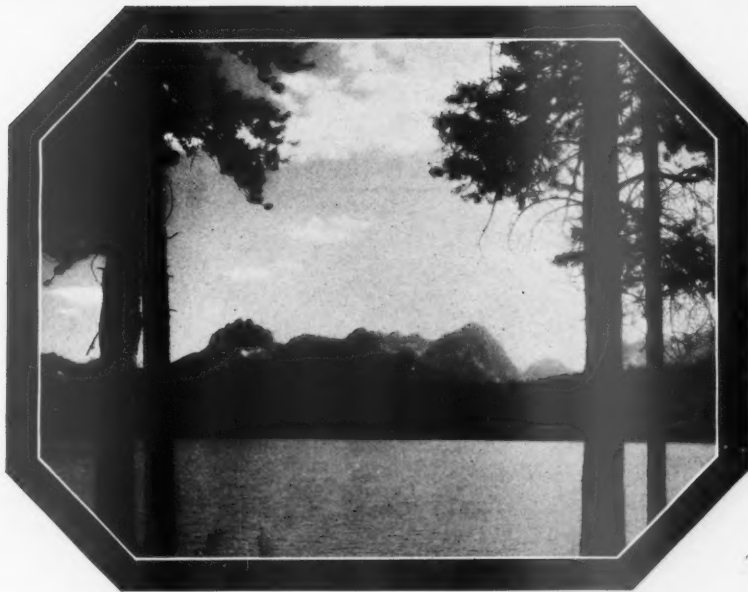
FOREST RECREATION as a growing need in the social development of the nation; the PROTECTION OF FISH AND GAME and other forms of wild life, under sound game laws; the ESTABLISHMENT OF FEDERAL AND STATE GAME PRESERVES and public shooting grounds; STATE AND NATIONAL PARKS and monuments where needed, to protect and perpetuate forest areas and objects of outstanding value; the conservation of America's WILD FLORA and FAUNA.

The EDUCATION OF THE PUBLIC, especially school children, in respect to our forests and our forest needs; a more aggressive policy of RESEARCH AND EDUCATIONAL EXTENSION in the science of forest production, management, and utilization, by the nation, individual states, and agricultural colleges; reforms in present methods of FOREST TAXATION, to the end that timber may be fairly taxed and the growing of timber crops increased.

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Member A. B. C.

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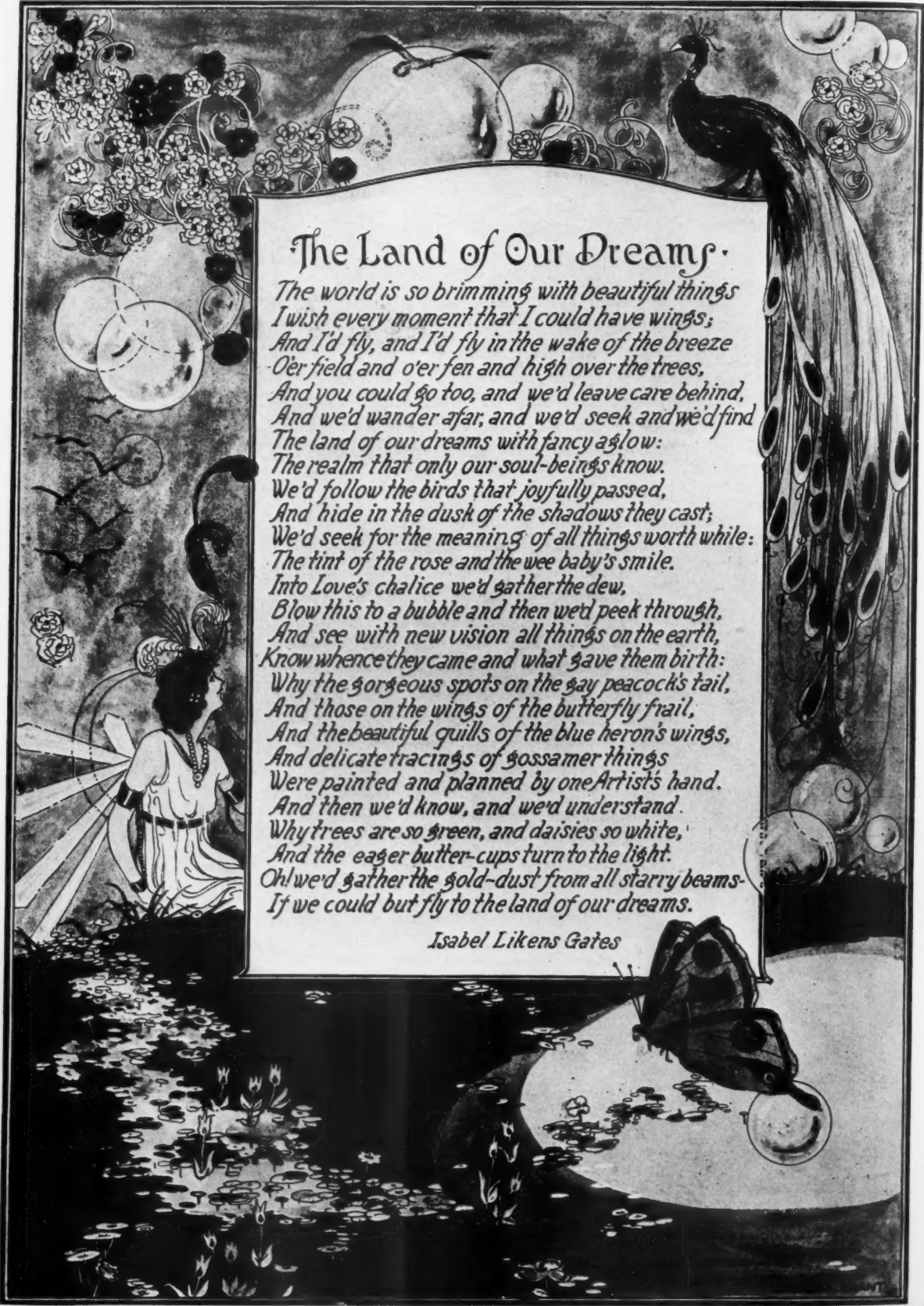
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## The Land of Our Dreams.

*The world is so brimming with beautiful things  
I wish every moment that I could have wings;  
And I'd fly, and I'd fly in the wake of the breeze  
O'er field and o'er fen and high over the trees,  
And you could go too, and we'd leave care behind,  
And we'd wander afar, and we'd seek and we'd find  
The land of our dreams with fancy aglow:  
The realm that only our soul-beings know.  
We'd follow the birds that joyfully passed,  
And hide in the dusk of the shadows they cast;  
We'd seek for the meaning of all things worth while:  
The tint of the rose and the wee baby's smile.  
Into Love's chalice we'd gather the dew,  
Blow this to a bubble and then we'd peek through,  
And see with new vision all things on the earth,  
Know whence they came and what gave them birth:  
Why the gorgeous spots on the gay peacock's tail,  
And those on the wings of the butterfly frail,  
And the beautiful quills of the blue heron's wings,  
And delicate tracings of gossamer things  
Were painted and planned by one Artist's hand.  
And then we'd know, and we'd understand  
Why trees are so green, and daisies so white,  
And the eager butter-cups turn to the light.  
Oh! we'd gather the gold-dust from all starry beams-  
If we could but fly to the land of our dreams.*

Isabel Likens Gates



# CAMERA HUNTING THE PRONGHORN



By E. S. CHENEY

## *Swift as the Wind, Elusive as the Will-o'-the-Wisp, Only the Flashing Lens Catches These Fleet Little Nomads*

OF ALL the subjects the motion-picture photographer is called upon to film, there is none more difficult of approach than the pronghorn, or American antelope. For three years I have been working on an antelope film for the Division of Fish and Game of the California Department of Natural Resources. I have made regular trips, both fall and spring, to known antelope country, devoting weeks to the search, traveling hundreds of miles, but my film is far from completion. Some trips yield several hundred feet of film—others are almost a blank.

The larger antelope bands of California are widely scattered over the bleak and semiarid region in the extreme northeastern part of the state. It is a land of sagebrush and sand, of desert broken by rimrock and lava slides, a rough and broken country, difficult to travel, most of it beyond roads, a great deal beyond trails. But even after reaching what may be designated as antelope country, it may be days, perhaps weeks, before a band can be definitely located.

Fleet-footed little nomads, wary and elusive, swift as the wind, like veritable will-o'-the-wisps, they can almost dissolve into the distance like mist before the sun, their white rumps disappearing over the horizon as wind-driven clouds. So, in trying to locate a band, one may follow many false leads. The animals are easily disturbed and rendered restless by the introduction of any new or unusual element into

a locality familiar to them; and it is not an unusual thing for a band, reported by incoming sheep-herders, perhaps, as ranging in a given region, to be fifty or even one hundred miles away by the time the place is reached. The only safe procedure is to sight before being sighted. With this advantage, the chances are even that one may get within camera range.

But the vision of antelope is uncannily keen. Their protruding eyeballs are almost as large as those of an ox, and the slightest movement within a radius of several miles is easily detected. Whether feeding or resting, the animals select, if possible, a position that commands a sweep of the surrounding country. Turn your binoculars on a band within three miles, and if you have crossed their vision, you will find them watching you. And in that case, the matter of a stalk becomes very complicated, for the animals will never allow you out of their sight. As you maneuver for a new position, you will find that the band has quietly moved off; as often as you shift, they will shift, also, keeping their distance and not allowing you to approach closer. Or perhaps they use entirely different tactics, taking to their heels and running quite out of sight and beyond the hope of pursuit. You never can tell. They are high-strung little creatures. After successfully locating a band without being discovered, I take plenty of time for observation and study and map out a campaign before making a single move in their direction.

I spend several days, if necessary, in a temporary blind built to screen my movements, watching the actions of the animals and studying the topography of the land. I memorize every break in the rimrock, every possibility of cover between my position and the feeding grounds of the band. I note the prevailing direction of the wind, the position of water, if any, and every other possible consideration that might make for, or mar, success. The stalk itself, when finally undertaken, may require half a day, for one must travel laden with cameras, tripods, temporary blinds, field glasses, provisions, and the inevitable water bottle.

In the fall of 1928 I stalked a band bedded down on a plain two miles to the northeast of my blind. The wind was fair and from the south. Shouldering cameras and all other necessary equipment, I dropped down behind a rim, out of sight to the lower plain. The rim was broken to the east by an old waterway and it was there I must cross their wind. The cover was short, and I was forced to cross over a mile of open country before reaching the waterway, so I veered off to the westward, keeping nearly two miles between me and the antelopes on the plains. In about two hours I reached the break, and took a last look at the band then feeding. I worked up through the break in the lava, keeping well back from the rim and at the end of about four hours reached a point opposite the break through



#### MOVIE FLASHES

Swift is their flight, in V formation, like a wedge of white-winged birds.  
Feeding among the junipers.

A band of the elfin creatures, confidently bedded down on the plain.

which I expected the antelope to work their way. But as I drew near I discovered a small band of range cattle, wild as the antelope themselves, right in my path. To startle the cattle would necessarily alarm the antelope, so I changed my plans. I dropped south a quarter of a mile, and approached the rim from another angle. This required another hour, but at last I arrived at the point of attack. Nearing the rim, I found a large clump of sage on the very edge, and crawled under it, with the camera on a dwarf tripod. There were forty-six animals feeding less than 150 yards from me. At last the camera sang a merry tune, and the deed was done. I watched them for an hour as they fed out of range and bedded down again about half a mile to the south.

And so the game was on again, and I must work back to the east, taking a circuitous route that finally brought me at the rim again, about seventy-five yards from the band, and close to their wind. Here I was able to secure about fifty more feet of film of the animals bedded down, but as I attempted to retreat to get

another angle I heard the clatter of hoofs and saw the entire band making out across the plain so swiftly they seemed to be sailing in V formation, like a flock of white-winged birds. They ran north to the higher plain and were gone. I never saw them again.

And so it was back to the camp again. From my observation blind there I saw other small bands on the plain, and had hopes of good camera shooting the next day. After supper I rolled up in my blankets before a small brush fire built on the dirt floor of



If you have crossed their vision within two or three miles, you will find them always watching your every move.

They always select, if possible, a position commanding a sweep of the whole surrounding country.



an old, abandoned cabin where I had taken refuge, and was soon asleep. The night was unearthly still—so still, that stirring restlessly, I was conscious of a sense of uneasiness. From afar the howl of a coyote floated down through the emptiness. I looked about me. It was snowing, silently, steadily. In the morning I looked out on a world shrouded in white. In my observation tower where I spent most of the day, getting what meager comfort I could from a small fire of sagebrush, I raked the plains with the glasses, but there was neither sight nor sound of antelope or any other living creature in all that wilderness. Nor again that season was I to sight them. Elf creatures, here today—tomorrow who knows what far bourn has claimed them? But here I was marooned in a sea of snow. My pack horses had been released and left to find their way back to the sheep ranch where they belonged, as I had neither feed nor water to keep them.

So there was nothing to do but to keep the home fires burning and wait for the horses to be sent back to me.

But other seasons and different localities require a modified technic. Originally antelopes were plain rangers only, always turning back at timberline. But the plains no longer are theirs and they have learned to take their wilderness as they find it. So in California, at least, we find them in the timbered regions.

On one scouting expedition I was forced to climb at least twelve juniper trees from twenty to thirty feet high to keep track of the band I was stalking. In this way I finally approached the band, made my picture, and retreated without being discovered.

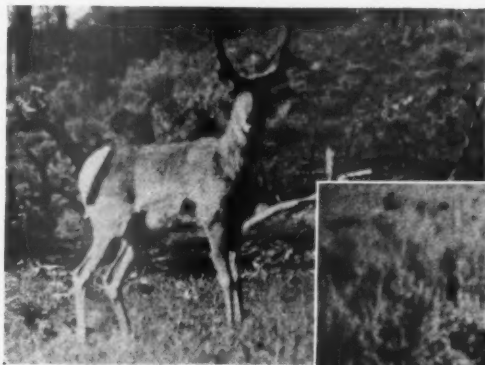
Successful approach and retreat, however, is not always possible. A misstep or the click of a dislodged rock may undo the work of several days searching; and to come on a band suddenly, unexpectedly, as I did one day, is disaster upon disaster. I wonder which was the more astonished that day? I know that I was shocked into rigidity, while they were galvanized into such a catapult flight that before I caught my breath they were gone. They are capable of terrific bursts of speed when alarmed or startled, but when not actually

confronted with an intruder, sometimes curiosity will act like a loadstone to keep them in the vicinity. Like the day, for instance, that a band had me treed. I was scouting along a table-land that was thickly timbered with junipers when I saw about fifty antelopes feeding on a lower plain. Keeping behind trees and rocks I worked down from the rim to a lower level and to within 125 yards of the animals. I found, however, that I was too low to get a camera location, and decided to climb a juniper tree. With my camera on my back, I went up and up, branch over branch, until I reached the very top. The branches were thick and I was well screened from view, but by the time I was in position the animals knew that something was in the tree, and they wanted to know what. They faced me, alert and quivering, before they advanced like a column of soldiers. At fifty yards they stopped and waited. Nothing happened, so they raced away,

only to halt and face about again. Then again the advance, this time from another angle. Again they halted and retreated. This was repeated several times, but the approach was always from a different side. Sometimes I

had an unobstructed view of the action, but in others the branches of the tree were in my way and I could not change my position. But with the camera braced against the trunk of the tree I got some good pictures.

In the hope of securing pictures of the young I made in the spring of 1929 an extensive trip that was a succession of disappointments and exasperations. While I found the does, and while I stalked them day after day and watched them from treetops and blinds, and while I used every strategy and device to track them down, at the end of three weeks I had failed to find a single fawn. There were old logging roads, that made it possible to do some scouting by machine, and I found that the hum of my motor would often lure my quarry into sight. A sudden turn of the road many times revealed an animal standing motionless within thirty yards. But not for long. A second or two, and she would show her heels. But if I stopped the motor and waited, she might make another approach, and dart back and forth. I came upon a doe early one morning standing motionless in the center of a burned-over area of several acres. She flirted around, disappearing in the brush, only to appear again, first on one side of the clearing and then on the other. As she hung around so persistently and seemed to make her exit by one trail, I



When I first saw her the doe stood motionless in the center of a burned-over area of several acres.



At the right is a young antelope, about five months old, awkward and wary.



decided she must have young in the neighborhood and settled down for a siege. I had at the first shut off my motor, darkened the window of the car on three sides to screen my own movements, and waited, hoping to get a nearer view, and watching her every movement through my glasses. Consumed with curiosity about that strange shiny black animal that was so quiet, she was a wary lady. She would saunter into view, nibbling idly here and there but with her eyes always in my direction. This kept up for an hour or more, and still I sat and waited. Finally I realized that I had not seen my lady for half an hour or more. I took the glasses and searched the entire neighborhood, every clump and bush in range, but could see no sign of her, and so I decided to go forth and look for the fawn. Very quietly and slowly I opened the door of

the car and slid to the ground. I had hardly gone twenty-five feet when I heard a snort from the brush, and I raised my head to see the doe crashing down on me across the clearing. I made back towards the car for my camera but she beat me to it. Before I could reach the door we were face to face within ten or fifteen feet. She halted a second and we glared at each other, I on my hands and knees, and she above me, her eyes blazing. She apparently thought I was a coyote. After she was on her way I took my time in searching for the fawn but with no result. Day after day, working in this wise, from early dawn to dark, I was eluded and evaded. Forms flitting through the brush in the distance, forms hurtling by me at close range, but never the young to be tracked down. So, another season, I will be on the trail again.



## *The Victorious Passage of the Shipstead-Nolan Bill*

**W**ON is the fight to preserve the lake levels and the wilderness shorelines of the thousands of lakes within and adjacent to the Superior National Forest in northern Minnesota. The Shipstead-Nolan bill, passed by the Senate on May 7 and by the House just before adjournment on July 3, became a law on July 10, when it was signed by the President. In this brief record is written one of the outstanding conservation victories of the second session of the 71st Congress.

Conservation groups and organizations throughout the country presented a solid front in support of the legislation. Opposition came primarily from a local water-power interest whose development plans contemplated raising the water levels of numerous lakes within the region with consequent destruction of the primitive beauty of the shorelines. The broad purpose of the act is to preserve and protect the scenic and recreational assets of the region while at the same time permitting its economic use. The act provides:

1. That all public lands of the United States north of township 60 north in Cooke and Lake counties and of a specifically described portion of St. Louis County, Minnesota, are withdrawn from all forms of entry or appropriation and become subject to laws and regulations generally applicable to National Forests and that the principle of conserving the natural beauty of shorelines for recreational use apply to the waters within the area specified.

2. That it becomes obligatory upon the Forest Service of the Department of Agriculture to conserve for recreational use the natural beauty of lake shores of all lakes and streams within the area which are now or eventually will be in general use for boat or canoe travel. In carrying out this principle, logging of shorelines is prohibited within two hundred to four hundred feet of lake shores except as may be necessary to provide banking grounds and to remove diseased, insect-infested, dying, or dead timber.

3. That in order to preserve the shorelines, rapids, waterfalls, beaches, and other natural features of the region in an unmodified state of nature, no further alterations of the natural water level of any lake or stream within or bordering upon the designated area shall be authorized except by specific act of Congress.

In carrying out the principle of preserving the natural primitive beauty and the recreational values of the region, which is probably the greatest water wilderness remaining in the country, the act amply provides for the economic use of natural resources and the homestead entry of lands chiefly valuable for agriculture. Passage of the act makes the first accomplished step in the larger conservation program of an international park and forest to include the boundary waters between the United States and Canada known as the Lakes of Verendrye. Both the American Legion and the Canadian Legion have endorsed this project as a fitting tribute to a century of peace between the two countries and as a memorial to the service men of both countries who served as comrades in the late war.



This interesting restoration of the Devonian Fossil Forest found at Gilboa, New York, shows in the foreground an idealized reproduction of the rock section and the three levels at which fossil stumps were found. The painted background shows the forest as it probably looked, with life-size reproductions of the plants at either side. This interesting exhibit is on display at the New York State Museum at Albany.

## The Oldest Known Petrified Forest

By WINIFRED GOLDRING

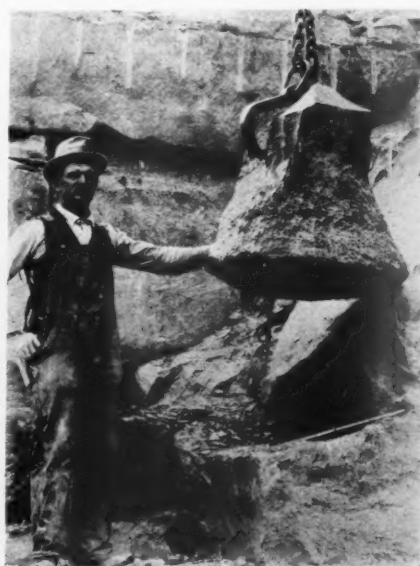
New York State Museum, Albany, New York

**I**N PAST geological times forests have had quite a different aspect from those with which we are familiar today, and the further back we go in geological history the more strange the types become. A few hundred million years ago extensive forests of types of trees unknown anywhere on the earth today flourished in eastern New York, and the history of their discovery and the gradual accumulation of facts leading to the solution of their nature hold a place of interest second only to the ancient trees themselves.

Over half a century ago, in the autumn of 1869, a great freshet in the upper valley of Schoharie Creek, in the Catskills, brought to the little village of Gilboa more than local attention. Considerable damage was done in the way of tearing out bridges, roadbeds and culverts around Gilboa, but the freshet more than justified itself in the eyes of scientists by uncovering in the bed

rock along the creek standing stumps of fossil trees. The rocks had previously been studied and referred to that period of time in geological history known as the Upper Devonian and dating back millions and millions of years. The importance of the discovery was immediately recognized. The bulk of the material was deposited in the New York State Museum and was submitted for examination to Sir William Dawson, McGill College, Montreal, recognized authority on Devonian plants. The trees were classified as accurately as possible from the material at hand and with the knowledge of that time. In these later years studies of other fossil plant material had shown that these trees had not been correctly classified, and yet the material was not satisfactory enough to permit of their being properly placed.

No extensive forest, in fact, no forest at all, had been visioned when the trees were first discovered. It



Removal of one of the fossil tree stumps from where it had rested for millions of years.

was naturally assumed that the trees had a scattered distribution. From the time of the original discovery nothing more was heard of these fossil stumps until 1897 when one of the scientists of the New York State Survey who was working in the Schoharie valley area reported finding some small specimens at the Manorkill Falls, about a mile above Gilboa. Later attempts to relocate these fossil stumps were fruitless until the summer of 1920 when special effort was made by the State Museum to add to the fossil plant material already in the collections. In the course of that summer upright fossil stumps were found, in place, not at the original locality but a mile south, and at a higher level. Five specimens were obtained here, and just as in the case of the first discovery the stumps were found with their bases resting in a bed of shale, black or greenish, representing the original mud in which the trees grew. This second tree locality has an elevation of 1,120 feet above tide, while the old locality at the present site of the Gilboa dam has an elevation of 1,020 feet. In 1920 the city of New York began construction at Gilboa preparatory to developing a storage reservoir. The reservoir, when full, is nearly seven miles long and has drowned the site of the village of Gilboa and its vicinity, destroying two of the fossil tree localities. In 1921, in the course of quarrying operations in connection with the work on the dam the original fossil locality was uncovered and



In this restoration of the Devonian seed-fern tree is seen the ancient form of the Gilboa tree, as it is known today. Characteristics are the bulbous base, the gradually tapering trunk and crown of large fronds, bearing sometimes at the tip the seeds and spore-bearing organs.



A roadside exhibit of fossil tree stumps from these oldest known forests is on display at Gilboa.

several stumps were found, one of them weighing nearly a ton and with a circumference at the base of twelve feet. In a quarry half a mile downstream a new fossil tree horizon was discovered, at a level of 960 feet above tide, sixty feet below the original or middle locality and 160 feet below the highest horizon at the Manorkill Falls. This quarry yielded the greatest number and on the whole the largest and finest stumps found. During one period of quarrying eighteen stumps were taken from an area fifty feet square. One of the largest stumps in the group had a circumference at the base of about eleven feet and at the height of twenty-two inches the trunk had a diameter of twenty-one and a half inches. Stumps of greater height but smaller girth were found. The interesting fact brought out was that at all three tree horizons the stumps were found in every case in upright position with the trunk extending into coarse sandstone above and the base resting upon shale, the shale representing the original muds in which the trees stood and varying in thickness from six inches to two feet. This quarry is not

included in the area covered by the Gilboa reservoir but as a fossil tree locality has had very little value since the completion of the dam and the cessation of quarrying operations. However, by the spring of 1924 the State Museum had acquired a total of nearly forty stumps, partial or complete, and a number of broken pieces. Taking into consideration with these the specimens distributed to other



museums and private individuals, those broken in quarrying and the discarded weathered specimens, together with those still left at Gilboa, the number of stumps taken from these three primeval forests must run into hundreds. In the Gilboa area the fossil tree localities stretch over a distance of more than a mile and two-thirds and discoveries have more recently been reported at some distance from this neighborhood. No forest as old and as extensive as this has been reported anywhere, so that New York State possesses in its rocks the oldest forest in the world and in its museum a unique exhibit.

Valuable as this collection of stumps was, without other material to augment it, our studies would have left us little better off than those who first studied the material. Persistent effort through the collecting seasons of 1920 to 1925 led to the discovery in the fine dark shales of the region of seeds, spore-bearing organs, foliage, roots and stems. Considerable lengths of trunks were also found and specimens showing the outer bark and petiolar scars. Provided with this variety of material we were able to classify and restore the tree described below. Associated with this tree, now commonly known as the Gilboa tree, but occurring in far less abundance are two types of trees belonging to a group represented today by the little club mosses,

ground pines and running pines of some of our woods.

The Gilboa trees, interesting in themselves, afford an index to the geography of the western Catskills and the Schoharie valley during the late Devonian period. During these times the Catskill mountains formed the low shoreline of a shallow inland sea, with the continental land lying to the east and extending far out into the present area of the Atlantic Ocean. From this land southwesterly flowing streams emptied into the sea bringing into it with the sediments they carried debris of the primitive vegetation that clothed this land. The coasts of these times were very unstable and thus produced a swampy shore-line along which grew forests of

these primitive Gilboa trees, spreading down to the waters edge. As the coast was gradually submerged the trees along the shore were carried beneath the water and sediments piled up over their bases. In time the sinking basin was filled by the deposits brought to it by the streams and the forest once again crept down to the waters edge. The fact that three levels of fossil stumps were discovered in the Gilboa area indicates that three successive forests flourished along these swampy coasts, were submerged, destroyed and buried. The fairly coarse sandstone in which the

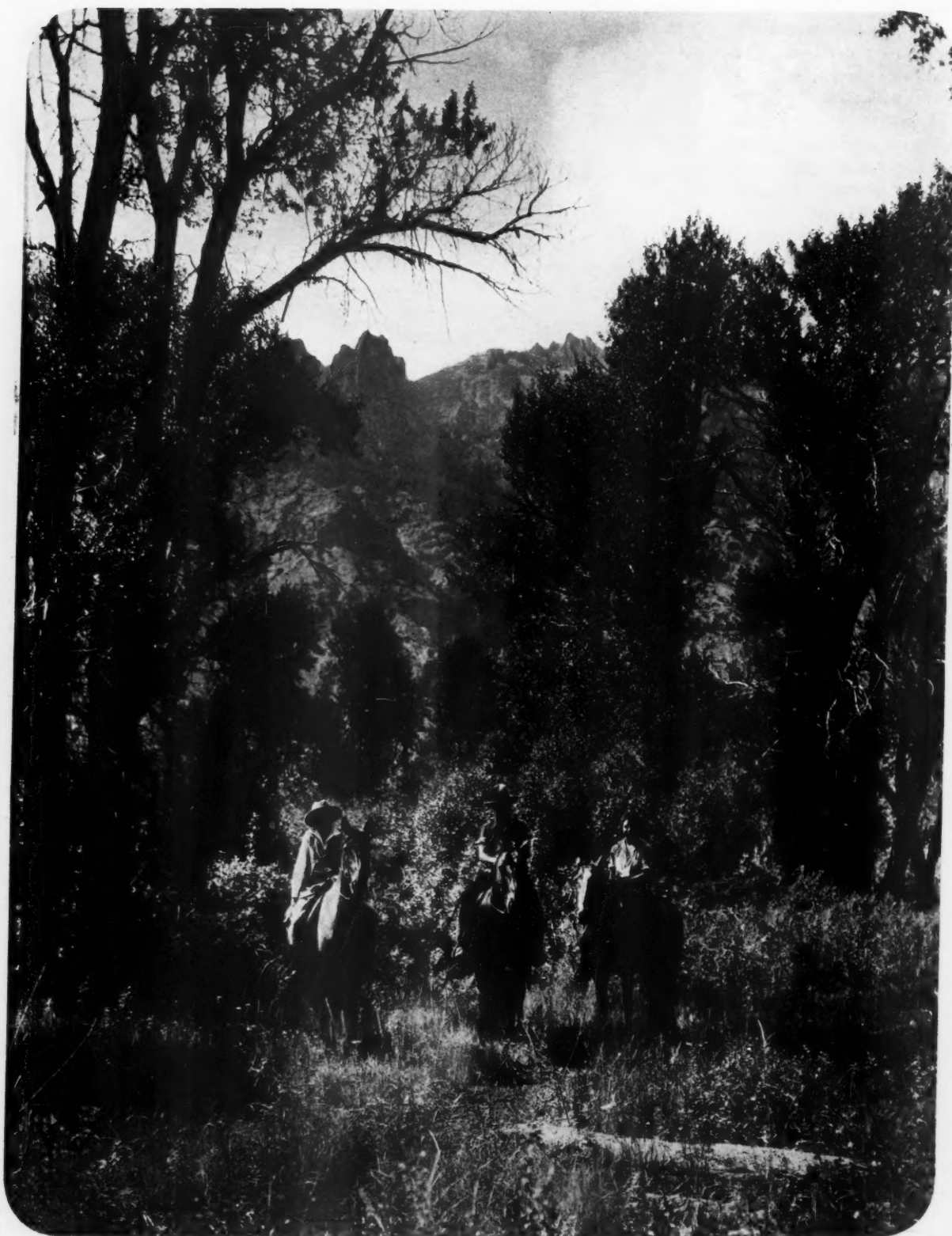
(Continued on page 546)



The lowest falls of the Manorkill, at Gilboa. This is where the seeds and spore-bearing organs were first found—the level is marked with a cross.



One of the fossil tree stumps in place—found along the road above the lowest falls of the Manorkill, at the highest tree horizon, 1,120 feet above tide.



Photograph by B. L. Brown

**Back to the free, open spaces via the Dude Trail! "There is nothing so good for the inside of a man as the outside of a horse."**



B. L. Brown

# *The Dude Trail*

By MARGARET HAYDEN MARCH-MOUNT

THE heart of man is essentially primitive and he must periodically leave the confusion of great cities for the silence of earth's wild beauty. He must get beyond the noisy market places, the roar of the subways and the din of pneumatic hammers to satisfy this yearning for untamed forests, windy uplands and peaceful valleys and the intriguing life they hold for him.

So he goes forth every year from the humdrum of commerce and industry in the East, lured by the magic of the forested West. Sometimes he takes his stand on the Public Domain or in the National Parks, but his legions, for the most part, find what they are seeking on the National Forests. The administrators of these great areas, especially the National Forest areas, have accepted this invasion for what it is and adjusted their working plans to take care of this new forest "crop." They consider the "dude crop," as the nature-hungry Easterners are known, rightful and valuable disciples of the forests and have provided for their comfort and recreation. This invasion by the Easterners has given the West a new industry. The "dude crop" has brought about the "dude

ranch" and the "dude rancher." The industry has passed from the green-apple stage and has come of age. The Dude Ranchers' Association has come into being, and besides a duly elected president it has a live executive secretary and a board of directors—and an annual meeting when the governor of Montana says to the governor of Wyoming, "It's good to be here."

Calendars are not the index of spring in Dudeland, but the first dude and the bluebird singing on the green sagebrush, whenever that may be. Since "shackin' up" last summer, dude ranchers have been throwing their lariats in the great congested spaces, inviting adventurous minds of the cities, especially those crowd-weary folk with a flair for the hills. In many cases, one partner of the dude ranch is a native "savage," and another an Easterner; and often there is a woman in the council.

One is tempted in referring to these, many of them Yale and Harvard men of the hills, as professors of leisure, doing a good part in the solution of the social problems arising out of the conquest of technical knowledge and the victory of the



industrial cog; redeeming the time of thousands released from the robots and gadgets, and guiding their primitive longings for a place in the open. These ranchers from their camps and resorts along the Continental Divide are now staging another trek along the old Indian moccasin trails. A priority activity on the ranger's spring cleaning program is a trail-clearing job for the aspiring student forest guard, soon to leave the college campus for the trail camp. No tarpaper shacks, waffle dens, nor imitation pagodas desecrate trail or highway of the national wild lands.

Many of these trails lead into Yellowstone Park, and a former superintendent has observed that the sun-tanned girl dudenes were as good riders and campers as the boys, expressing real "parity" in the hills, and probably not quite so much inclined to camp near the ice cream and candy shops.

The boy crop, however, probably affords the greatest yield. Some ranches are devoted exclusively to young boys, and the president of the Dude Ranchers' Association conducts a mountain school for boys, where pioneer fiber is developed; and aside from their academic courses, the students naturally absorb some knowledge of nature and forestry.

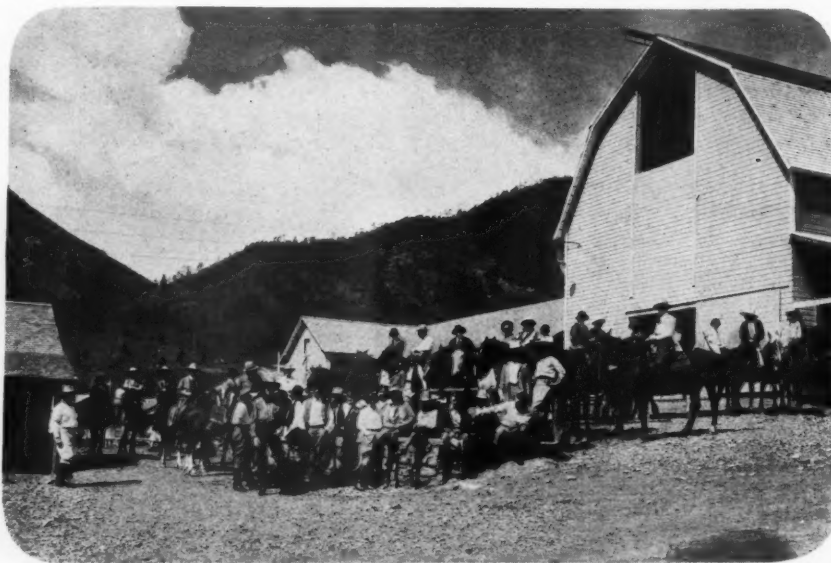
While the "inexhaustible" forests of the Great Lakes have been sacrificed to build up the homes and bring luxury to the treeless plains of the Midwest, the veteran virgin forests of the Rockies have been classified as "inaccessible," until this dude industry, the child of the cow ranch, has climbed from the railhead to timber line where only a horse can go. And while the wild outlaw horses of the open range days are being cleared from the ranges, the tame dude horse is doing his bit, toting his human burden of dude, dudene and dudelet. Quoting a nationally known guide, philosopher, and friend, "There is nothing so good for the inside of a man as the outside of a horse." The old-time pack string is now in many instances being replaced by motor trucks.

The new dude crop is no longer an infant, but a lusty voice crying in the wilderness. Their catalogs outcolor the garden variety; the smell of the pines is upon them, and the hoof-bruised sagebrush. Outdoor notes query: "Are you a victim of suppressed desires? Read dude saga and travel up higher."

Each winter as the Chinooks clear the snows, additional log cabins are built, and more pretentious structures, in harmony with the architecture of the woods, are erected on fresh sites along the mountain streams. Or else, like the birds of the air, these ranchers migrate south and build other

ranches in the lower Rockies of Arizona.

No longer is the industry increasing the fire hazard, playing with matches in the evergreens and building over-large campfires in the woods. The dude leaders become key-men of the fire organization on the National Forests, and the cowboy wranglers know well how to build the Indian



Enjoying the welcome of the West—A happy group of dude ranchers about to take the trail.

campfire, small enough to huddle around and keep under control.

Far from being a figure of scorn, the dude enjoys Western welcome, resulting in a curious and happy blending of the cultural and the primitive; and dude money—a sign of summer—was a potent factor in keeping the banks solvent when evil days fell upon the cattle business in particular, and the nation in general.

Though the sheep and the shepherd seem not to have retained their classic standing, the rôle of the rangy cowboy is no less romantic as he wrangles the saddle horses in from their federally allotted pasture, long before the rising and breakfast bells up at the guest cabins—and envied indeed is the dudene cowgirl who is permitted to join the early morning round-up into the ranch corrals.

There are as many varieties of dude ranches as of a certain brand of pickles. Many of these ranch sites are duly mapped and blueprinted by forest rangers, and others are glorified pioneer homesteads, marked by a polaris survey, with all due allowances for the magnetic attractions of the north star, and designated by chiseled mounds of stone and monuments of porphyry and granite boulders. Some are little tented tepee towns pitched by aspen groves along mountain streams; others are the last word in rough luxury, with electric lights set in fantastic wooden fixtures—with polo grounds, golf courses, telephone connections to Wall Street, and what not.

Until the honk of humankind drives them from their winter feeding grounds to the high (Continued on page 548)

# The Covered Wagon Centennial

By GEORGE D. PRATT

*President, The American Forestry Association*

THE story of the winning of the West is our national epic. It involves more than four thousand miles of historic highway known as the Oregon Trail and its major branches, the Bozeman Trail, the Mormon Trail and the California Trail. These make the greatest route of pioneer travel known to mankind. Over this combined trail fully 350,000 Americans made their weary and hazardous way into the region beyond the Rockies from 1830 to 1870 to settle and build our empire west of the Mississippi River.

Its origin is ageless. For centuries before white men trod through its winding branches, it had been worn by the Indian and the buffalo. Then came the fur traders and the explorers, notably the Astorians. Finally, on April 10th, 1830, the covered wagon train of the firm of Smith, Jackson and Sublette set out from St. Louis for a fur-trading rendezvous at the head of Wind River in the Rockies. They returned six months later to announce to the world that the covered wagon mode of transportation through the West was practicable and feasible. This was the signal the eastern world awaited. They set forth by the thousands, their ox-drawn wagons cutting deeper and deeper into the sod of the prairie and the sage-spread plains as the years rolled by. The Oregon Trail was a weary route for the fathers, mothers and children that followed it, but the reward when they reached the valleys of the mountains was great. Out toward the sunset homes began to rise and fields began to bloom. Schools and churches were established. In short, an American civilization rose that stretched our empire from sea to sea. In the words of Dr. Howard R. Driggs, professor of English in New York University and President of the Oregon Trail Memorial Association, "the West is only the transplanted East."

Time passed. This great and fascinating West found itself speeding along the road of progress and prosperity. The pioneers who had blazed the trail West were aging, the younger generation was growing up, forgetful of the story of the westward march of their elders.

At this time Ezra Meeker entered the scene. He had gone out as a covered wagon pioneer in 1852 with his wife and six-months-old son; he had joined with zeal in developing the great Northwest. But ever he had cherished a desire to re-blaze the old Oregon Trail, so at the age of seventy-six, when most men are ready to lay down life's burdens, he took up the task of making the Oregon Trail a vitalized monument to pioneer courage and enterprise.

Rebuilding an old prairie schooner out of parts of three that had crossed the plains he trained a yoke of young oxen and with a companion and a dog set forth on the long trek from the State of Washington to the city of Washington.

It required twenty-two months to make the journey; but after many ups and downs he arrived in New York City, only to be arrested for having cattle on the streets. How-

ever, the mayor soon settled this trouble by giving the old pioneer the freedom of the city, and assigned a policeman to pilot him and his wagon up and down Broadway. It took about half the force to get him out of the jam in Wall street.

More than twenty years followed that coast-to-coast trip of the pioneer—years devoted by him to the single purpose of rousing America to the vital significance of the winning of our great West. During that time he traversed the trail repeatedly by train and by automobile, and finally by airship. This airplane flight was made at over a hundred miles an hour—fifty times faster than his initial ox-team journey. When, in the plane, he reached Washington, he was welcomed by President Coolidge, who, with Congress, helped his plan to pay tribute to our western nation builders. A little more than a year ago, this dauntless veteran, a few days less than ninety-eight years old, passed to the Great Beyond. His dying words were characteristic: "I am not ready to go yet; my work is unfinished."

At the beginning of this year Lorne W. Barclay, formerly national educational director of the Boy Scouts, took charge of plans for a national celebration. On February 21, President Hoover issued a proclamation calling upon the nation to observe the Covered Wagon Centennial, April 10 to December 29. The closing date is the hundredth anniversary of the birth of Ezra Meeker.

A nation-wide program is now well under way. Schools everywhere are making a study of the pioneers an important part of their curricula. Civic, fraternal and historical societies are staging pageants and commemoration programs. On July 4 Boy Scouts from all over the country gathered at Independence Rock for a "round up" on the prairie. Here they camped for three days with cowboys and Indians.

In Nebraska the governor is on the State committee and the celebration will be a state-wide function. In St. Louis, on April 10, the entire city took part in the Covered Wagon pageant, in which the scenes of a hundred years ago were re-enacted. In New York City, eight hundred schools are daily learning the story of the great westward tide. Similar celebrations are taking place in every State. Dr. Driggs states the purpose of the Centennial as follows:

"The vital question for you and me today is: Will the warp of American ideals and patriotism hold? It will certainly hold if we can so humanize our history as to make it live in the hearts of the youth of America. This will be achieved only as we save and teach in vibrant forms the simple stories of the heroism of our pioneers who laid the foundations for the building of our Republic. The future welfare of our country depends upon this vital work. Our tomorrows are rooted in our yesterdays; our progress is predicated on the ideals which have brought our nation gloriously through to its high standards of today. The opportunity to teach our history even more magnificently is reaching towards us."



**THE PASSENGER PIGEON**

A reproduction of Audubon's famous drawing of the wild pigeon of America, the passing of which is one of the most tragic incidents in the wild life annals of the nation.



# The Forest Was His Studio

John James Audubon Insisted Upon Living the Life He Loved and as a Result, the Art and Literature of the World Have Been Enriched

By H. O. BISHOP

**D**O YOU know the name of the greatest painter of birds and animals the United States has ever produced? It is John James Audubon. No man ever loved the forests of America more than this great man. He roamed the woods from dawn to dusk. Nowhere did he find a more comfortable bed than beneath some giant tree. He was awakened each morning by a feathered opera which produced sweeter music than any company of Broadway stars. The forest was his studio. It has long been believed that Audubon was born on a plantation near New Orleans in 1780, but later discoveries of hitherto unknown documents by Francis Hobart Herick, many of which are authenticated by the signature of Audubon's father, point to the fact that his birthplace was the seaport town of Les Cayes on the southwestern coast of Santa Domingo, now known as Haiti. He died near New York City in 1851. His father was the twentieth child of a family of twenty-one, all of whom grew to maturity. One of the happy sights of the French village in which this family lived was to see the twenty-one young Audubons, accompanied by their father and mother, going to church each Sunday morning. When the father of America's great bird and animal painter reached the age of twelve, his parents deemed it high time for him to be making his own way in the world. He was therefore provided with a new suit, an extra shirt and the parental blessing. He was told to go out into the world and make his name and fortune. Children were not coddled and pampered in those days. It was not long until the lad had secured a job before the mast on a fishing vessel bound for the coast of America. At seventeen he was rated as an able seaman. At twenty-one he commanded a vessel, and at twenty-five was owner and captain of a small craft. He was a hustler, and soon accumulated a small fleet. It was not long until he was able to buy an estate in the West Indies. He was now rated fairly wealthy, and was looked upon as an unusually substantial citizen. His success and prominence made it possible for him

to receive the command of a French man-of-war. During these early years he made frequent trips to America and bought land in Louisiana and Pennsylvania. And, better still, became the husband of Anne Moynette, a beautiful and rich Louisiana girl. Three sons and one daughter came to their household. The youngest son became the great painter. A few years after the birth of this child, Mrs. Audubon lost her life in Santo Domingo during a revolt, while sojourning there on a plantation owned by her husband.

The unhappy man went to France and soon took unto himself another wife. The young son—the future great artist—was placed in charge of this step-mother who, fortunately, gave him almost as much love and care as his real mother. In the meantime the father resumed his world-roving.

From babyhood Audubon loved birds and trees. While toddling around the yard at the old Louisiana plantation, the sight of a bright-plumaged bird would bring a smile of joy to his little face. When he was old enough he was allowed to go into the woods to see the birds and small animals. To draw these wonderful creatures on paper became his childhood ambition. His early efforts, however, failed to satisfy. For a number of years he burned them on each succeeding birthday.

In order at least to partially satisfy this longing his father placed him in the studio of David, the celebrated French painter. This stubborn artist, without paying the least attention to the natural desires of the boy, set him to work drawing the heads of horses and the arms and legs of giants. Birds were neither seen nor heard in David's studio. Young Audubon was honorably faithful in drawing these objects, but ignored all other studies, preferring to spend his time in the woods gathering specimens of various kinds and making drawings of his feathered friends. The father was ambitious for his boy to



From the painting by Frederick Cruikshank.  
Engraving by C. Turner, A.R.A.

**JOHN JAMES AUDUBON**  
America's greatest painter  
of birds and animals.

enter the navy and become a hero of the sea. But he had the good sense to give up this desire when convinced that the natural bent of his boy was that of a naturalist. Accordingly, he sent the lad, now seventeen years of age, to his farm, near Philadelphia, in Pennsylvania. No boy was ever happier. On this beautiful farm, through which ran a cool stream, with hundreds of virgin trees lining its banks, he spent many joyous days doing the things he loved so much—drawing, fishing, hunting, roaming and collecting specimens of natural history. His home soon became a most interesting museum, filled with drawings of birds and animals, and all sorts of eggs and stuffed beasts and birds.

It was on a farm adjoining this one that he met Lucy Blakewell, who later became his wife. The Blakewells were English, and for some time young Audubon kept away from them, entertaining the French ill-feeling of that period toward Britishers.

With unpardonable incivility he refrained from returning Mr. Blakewell's call. This feeling, however, was swept away when he accidentally discovered that this gentleman was very fond of hunting and knew a lot about birds. They met one day in winter while hunting grouse on Perkiomen Creek. "I was struck,"

wrote Audubon, "with the kind politeness of his manners, and found him a most expert marksman, and entered into conversation. I admired the beauty of his well-trained dogs, and finally promised to call on him and his family. Well do I recollect the morning, and may it please God may I never forget it, when, for the first time, I entered the Blakewell household. It happened that Mr. Blakewell was from home. I was shown into a parlor, where only one young lady was seated at work, with her back turned toward the fire. She rose on my entrance, offered me a seat and assured me of the gratification her father would feel on his return, which, she added with a smile, would be in a few minutes, as she would send a servant for him. Other ruddy cheeks made their appearance, but like spirits gay, vanished from my sight. Talking and working, the young lady who remained made the time pleasant enough, and to me especially so. It was she, my dear Lucy Blakewell, who afterwards became my wife and the mother of my children."

Some years later in describing his life and character at the time he was living on this Pennsylvania farm and was falling head over heels in love with Lucy, he said: "I had no vices, but was thoughtless, pensive, loving, fond of shooting, fishing and riding, and had a passion for raising all sorts of fowls, which sources of interest and amusement fully occupied my time. It was one of my fancies to be ridiculously

fond of dress; to hunt in black satin breeches, wear pumps when shooting and dress in the finest ruffled shirts I could obtain from France. I ate no butcher's meat, lived chiefly on fruits, vegetables and fish, and never drank a glass of spirits or wine until my wedding day. To this I attribute my good health, endurance and iron constitution. So strong was this habit that I disliked going to dinner parties, where people were expected to indulge in eating and drinking and where often there was not a single dish to my taste. I cared nothing for sumptuous entertainments. Pies, puddings, eggs and milk or cream was the food I liked best, and many a time was the dairy robbed of the cream intended to make butter for the Philadelphia market. All this while I was fair and rosy, strong as anyone of my age and sex could be, and as active and agile as a buck. And why, have I often thought, should I not have kept to this delicious mode of living?"

Before giving his consent to the marriage, Mr. Blakewell insisted upon the young man taking a job with a New York firm in order to get some practical training in business affairs. Of course he complied with the request, but, as usual, trees and birds received

practically all his attention. He had no more use for business than a turtle for a bird-nesting box.

The wedding journey of the Audubons, taken more than a year after their marriage, was very much of an outdoor affair. They went to Pittsburgh on horseback, and from there down the Ohio River to Louisville in a flatboat. No bride and groom and baby were ever happier. They would tie up their boat at a shady spot on the bank whenever they felt like it. The young husband, accompanied by his fair young helpmate and the wee one, would ramble through the woods, painting birds, hunting game and catching fish. The clear, cool river was their bathtub, the sky their blanket, and the songbirds their radio. The cheeks of the baby were as rosy as a spring blossom.

Some twenty years later, while writing about this trip, Audubon said: "When I think of these times, and call back to my mind the grandeur and beauty of those almost uninhabited shores; when I picture to myself the dense and lofty summits of the forest, that everywhere spread along the hills and overhung the margins of the stream, unmolested by the ax of the settler; when I know how dearly purchased the safe navigation of that river had been by the blood of many worthy Virginians; when I see that no longer any aborigines are to be found there, and the vast herds of deer, elk and buffalo, which once pastured on these hills and in these valleys, making for themselves great roads to the several salt springs, have ceased to exist; when I reflect that



Reproduction of Audubon's sketch of the rare Welcome Partridge of the Pacific Northwest.

all this grand portion of our Union, instead of being in a state of nature, is now, more or less, covered with villages, farms and towns, where the din of hammers and machinery is constantly heard; that the woods are fast disappearing under the ax by day and the fire by night; that hundreds of steamboats are gliding to and fro over the whole length of this majestic river;

when I see the surplus population of Europe coming to assist in the destruction of the forest and transplanting civilization into its darkest recesses; when I remember these extraordinary changes have all taken place in the short period of twenty years, I pause, wonder and, although I know all to be a fact, can scarcely believe its reality."

At Louisville, Kentucky, in partnership with a friend named Ferdinand Rosier, Audubon embarked in the mercantile business. This venture, as may be imagined, did not prove a success. His heart was not in it. He just had to be with his beautiful birds, and go wandering through the forests. After two unsuccessful business attempts at other places, the firm, in 1812, dissolved partnership, and Audubon took up his residence at Hendersonville, Kentucky, where his second son was born. While living at Louisville, Audubon was visited by Alexander Wilson, the famous ornithologist. Wilson had accidentally called

for the purpose of soliciting Audubon's subscription to his work on American birds. In Audubon's writings is found this reference to the visit: "How well do I remember him as he then walked up to me. His long, rather hooked nose, the keenness of his eyes and his prominent cheek bones stamped his countenance with a peculiar character. He had two volumes under his arm, and as he approached the table where I was

working, I thought I discovered something like astonishment in his countenance. He opened his books, explained the nature of his occupation and requested my patronage. I felt surprised and gratified at the sight of his volumes, turned over a few of the plates and had already taken a pen in hand to write my name in his favor, when my partner, rather ab-

ruptly, said to me in French, 'My dear Audubon, what induces you to subscribe to this work? Your drawings are certainly far better; and again, you must know as much of the habits of American birds as this gentleman.' Whether Mr. Wilson understood French or not, or if the suddenness with which I paused disappointed him, I cannot tell, but I clearly perceived that he was not pleased."

At Wilson's suggestion, Audubon took down a large portfolio and showed him the drawings he had made himself. He had now a collection of about two hundred. Wilson was amazed. He never dreamed that any other person was engaged in such a work in America. Audubon treated him like a prince. He loaned him his drawings and went on trips with him through the woods and found birds for him that he

never before had seen. He offered any of his drawings to Wilson for publication purposes, merely stipulating that his name should appear when published. Wilson was grouchy and selfish.

His disposition was as shriveled and worthless as a lost prune. He expressed no gratitude for these generous offers. In his next volume he gave utterance to gross misrepresentations in commenting on his trip to Louisville, saying: "I neither received one act of civility from those to whom I was recommended, one subscriber, nor one new bird; though I delivered my letters, ransacked the woods repeatedly and visited all the



Audubon's vivid drawing of the Arctic Tern. "Light as a sylph," the great woodsman said of this bird. "The graces, one might imagine, had taught it to perform those beautiful gambols."



characters likely to subscribe. Science or literature had not one friend in this place."

Audubon's next business venture was in partnership with his brother-in-law at New Orleans. This proved as unsuccessful as previous efforts. In the meantime, the natural-born artist and naturalist devoted days and weeks to long trips through pathless forests with only his faithful dog as his companion. Not a day passed that new additions were not made to his collection. It was necessary to shoot some of the birds and then ingeniously place them in natural positions so as to be able to paint them. Others he would draw with the aid of a telescope, thus portraying them in their natural surroundings.

By this time Audubon was no longer the well-dressed dandy he had been while living on the farm near Philadelphia. He looked the part of an "American Woodsman," a title by which he delighted to describe himself. His whiskers were bushy, his hair long, and his clothing rough and durable. With gun in hand, his color-box strapped to his back, and his dog trotting by his side, he must have looked exceedingly picturesque, and possibly "queer" to the occasional natives with whom he came in contact. These thousands of miles of tramping over a period of many years were evidently done with no object in mind other than studying nature at close range. No definite idea of publishing his work had as yet occurred to him.

In the midst of these activities he received a letter informing him of the death of his father in France, leaving him a fortune of \$17,000, which was held in trust by a friend at Richmond, Virginia. This friend shortly thereafter failed in business and Audubon never received a penny. But this worried him not at all. He kept right on pursuing the studies of nature. Now and then he would go broke and find himself considerably in debt. He would work himself out of these difficulties by giving drawing lessons and making crayon portraits in Cincinnati and Louisville.

His friends not only condemned this mode of conduct, but looked upon him as a mild sort of madman. But his wife, God bless her, never wavered in her love for him, nor in the firm belief of the great value of his work. She encouraged him in every possible way. When others bluntly told him he ought to give up his wanderings and foolish daubing and go to work at something useful like other men, she merely smiled, gave him a kiss, and told him to pay no attention to their ignorant prattle, but to carry on. What a rare and wonderful wife! In order to "make ends meet" and assist in the education of their children, she worked as a governess at New Orleans and Natchez when he was roaming in those sections of the country. At Bayou Sara she established a school. Audubon assisted her for a time by teaching dancing and music.

During the year 1824 he made a trip to Philadelphia which proved to be the turning point in his career. The raising of the necessary funds to make this trip seems a trifle amusing to the people of a little more than a hundred years later. He turned to all sorts of manual labor, including the painting of the interior of a steamboat. Can you imagine the

world's greatest painter of birds daubing paint on the plank of a boat?

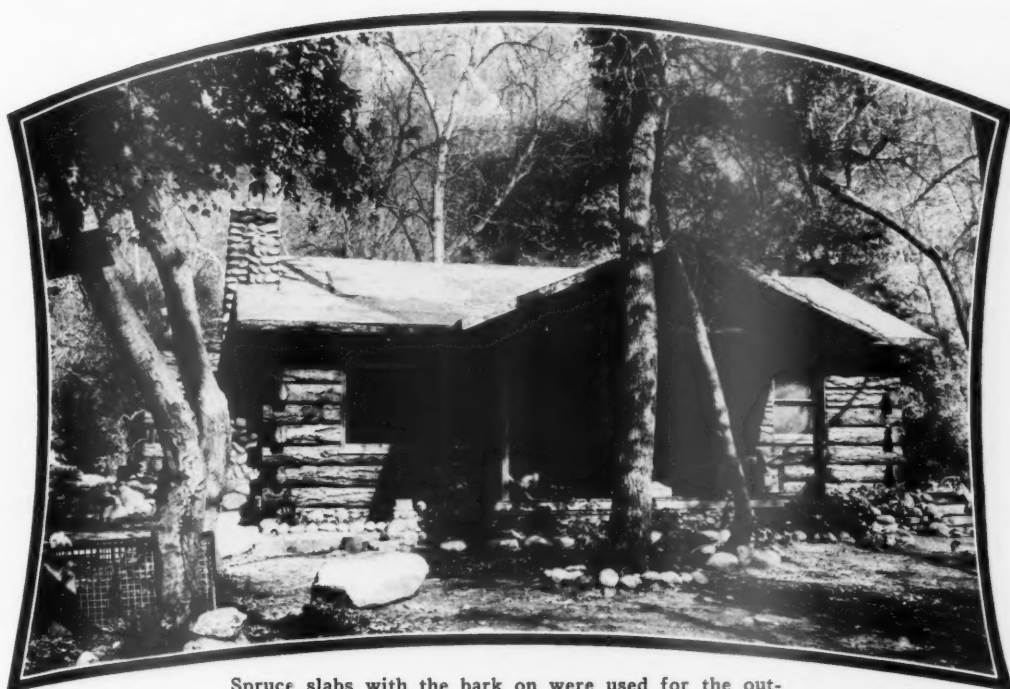
At Philadelphia he met Prince Canino, a son of Lucien Bonaparte, who greatly admired his drawings and urged him to have them published so that the world might see them. Full of hope, he hastened back to his wife in Louisiana, determined to accomplish something big. One night rats destroyed two hundred of his choicest paintings. Discouraged? Not at all. He at once headed for the woods to replace them. Two years later, still encouraged by the words of the Prince, he sailed for England from New Orleans to see what could be done about publishing his drawings. He did not know a single person in that country, but was determined to accomplish something. He exhibited his pictures at various places. Very soon the noted British artists and naturalists were sitting up and taking notice. Great men took him by the hand and praised his work without stint. These included such men as Sir Walter Scott, Herschel and Christopher North. In France he attracted the attention of the great Humboldt, Cuvier and St. Hilaire, who generously acknowledged his great ability. Things began to look much brighter for the unknown American.

In 1827 he issued the prospectus for his famous work, *The Birds of America*, containing five plates. The entire work consisted of four folio volumes of plates. The price of the work was \$1,000, an enormous sum for those days. The entire cost of producing the issue was \$100,000. Audubon, at that time, did not have enough money to pay for one volume. Sir Thomas Lawrence, the painter, came to his rescue. Through his influence Audubon sold several paintings at handsome prices. He continued supporting himself and paying his engravers' bills by painting and selling pictures. The high price of the work made the taking of subscriptions an exceedingly slow process. In 1829 he returned to America for the purpose of taking subscriptions. Many people would withdraw their names, thus causing delay and renewed efforts. But this great soul thrived on discouragements.

Daniel Webster not only subscribed for the work, but gave him the following letter: "I take this mode of commending Mr. Audubon to any friends of mine he may meet on his journey to the West. I have not only great respect for Mr. Audubon's scientific pursuits, but entertain for him personally much esteem and hearty good wishes."

Washington Irving gave Audubon letters of introduction to President Andrew Jackson, Martin Van Buren, and other distinguished men in Washington. His visit to the national capital was one of the most enjoyable experiences of his life.

The first volume of his beautiful work was issued in London in 1830—just a hundred years ago. Following its appearance, Audubon began writing his *Ornithological Biographies*, together with reminiscences of personal adventure and descriptions of scenery and character. It was published in Edinburgh, Scotland, between the years 1831 and 1839. It consisted of five volumes. In order to obtain the necessary material the author was obliged to make a number of trips to the United States, despite the fact that he always suffered almost death through seasickness. (Continued on page 546)



Spruce slabs with the bark on were used for the outside walls of this cabin, producing the effect of logs. A built-in garage is one of the admirable features of the plan.

# Planning the Mountain Cabin

By CHARLES ALMA BYERS

ORDINARILY, it would seem, the planning of a mountain cabin is accorded but little thought or study. Not only is it rather commonly lacking in any semblance to outward attractiveness, but in the handling of the interior it even more often shows disregard for convenience and comfort. That it is so frequently neglected in such respects may, no doubt, be largely attributed to the fact that, as a rule, it is only intended for occasional use, for a few days at a time; also, of course, partly to the fact that it is usually built as inexpensively as possible—not infrequently by the owner himself at odd times. However, even though strict economy is to be practiced in its construction, the mountain cabin is deserving, from the standpoint of planning, of more than makeshift consideration. Indeed, in its designing, building and equipping are not only afforded many interesting possibilities, but various points are involved undoubtedly needing most thoughtful attention.

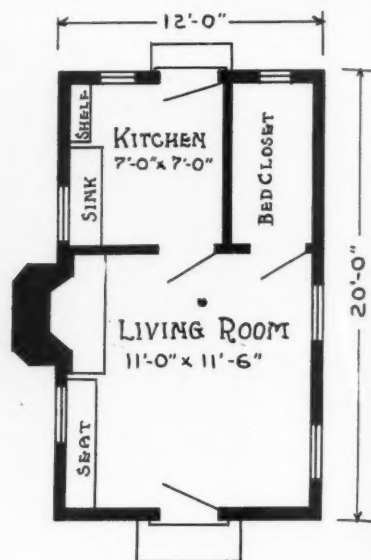
It is expected, in most cases at least, that the mountain cabin will be designed and constructed along rustic lines. It is thus the better harmonized with its surroundings, the better fitted to the probable picturesqueness of its setting. In some instances this appearance of rusticity is especially pronounced, while in others it is merely suggested. Much depends, of course, on the materials most readily obtainable and easiest to use; but, regardless of the selection in this respect, its leaning toward the rustic will also be more or less governed by the character of the particular setting, as well as by individual tastes.

One commonly associates the term "cabin" with a house built of logs. However, these vacation and week-end mountain abodes, while retaining the name of "cabin," are, today, built of various materials as regards the walls—ordinary lumber, logs, bark-intact slabs sawed from logs, stone, and, occasionally, even stucco over framework, though this is not so rustic in effect.





This little mountain cabin has two rooms—kitchen and general-purpose living room; and the latter is provided with a closet-concealed bed.

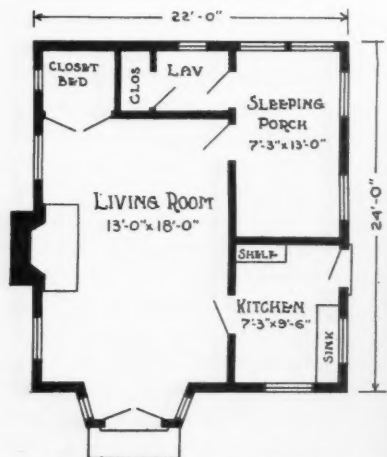


Doubtless the most popular material, perhaps because of its being easiest handled, is ordinary lumber. And since the aim is usually to build as cheaply as possible, the lumber chosen for the outside walls commonly runs to broad widths—say, eight, ten or twelve inches—and is set vertically, with the cracks battened with narrow quarter or three-eighths-inch strips. As also being easy to handle by the amateur builder, shingles and split or sawed shakes are much used for outside wall construction, particularly where the better class of workmanship is desired.

Probably the next most popular type of mountain cabin is that which is either built of logs or affects a log-built appearance. Real logs when used, must, of course, be straight and of fairly uniform sizes, and, to enable their being laid in a reasonably tight or solid wall, require notching where they cross in the forming of corners. They are also usually somewhat dressed on the top and bottom sides to facilitate

their being snugly fitted together, and then laid in mortar. Instead of whole logs, however, slabs cut from their sides, which are produced in preparing logs for sawing up into lumber, are now generally given the preference. These are often stocked the same as lumber by dealers in mountainous localities and may be obtained at very moderate prices. Having the bark intact they produce, when used horizontally, quite the effect of real logs, and yet may be handled very much in the same manner as boards.

Stone—cobble, split, or the miscellaneous pick-up kind—is also used in building vacation and week-end cabins, especially if obtainable on the building site or nearby. The transportation of materials into such localities is usually a problem to be reckoned with, and if it can be solved in some such simple manner, the matter of cabin-building is rendered that much easier and cheaper. Stone, although it must be laid in cement mortar, is very easy to handle, piecemeal,



An inexpensively built cabin consisting of a large living room, with bed closet; kitchen, with sink and shelves; and a sleeping porch, together with lavatory and closet.





by the inexperienced builder. Then, too, stone has the notable advantage over most other materials in that it makes the cabin the more nearly fireproof—always a big asset in districts where forest fires are a possibility.

Frame and stucco cabins are also beginning to make their appearance in some of these mountain retreats. However, save in places where a community of vacationists has materially tamed the wildness they are really too "dressy" to seem suited to the usual environment.

Whatever material is used for the outside walls, a certain amount of lumber will, at least, be required for finishing, especially about doors and windows, and for partitions. The interior walls, where strict economy prevails, are often left without any special finish. This is particularly true of the real log cabin. On the other hand, the stone house will sometimes be finished with plaster, perhaps put on by the owner at odd times.

Composition wall-board, with the joints battened, is commonly employed in paneled fashion for such purposes in the better-appointed cabins, and, indeed, makes a most satisfactory wall finish.

The roof is, in most cases, of either common shingles or shakes. They are very easily laid by the amateur and at the same time produce a suitable appearance. Composition roofing,

preferably given a finish of crushed granite or crushed brick, to overcome its ordinary severity, is also effective, and for the stone cabin especially, helps toward making the structure less susceptible to destruction by fire.

A worthwhile detail in the building of a mountain cabin, since the place will probably be occupied only a small part of the time, is the equipping of the windows with shutters. These may be made of plain, rough boards, fastened with hinges, and provided with hooks—to enable their being thrown open during occupancy and securely closed and fastened on the inside during vacancy. They constitute a pro-

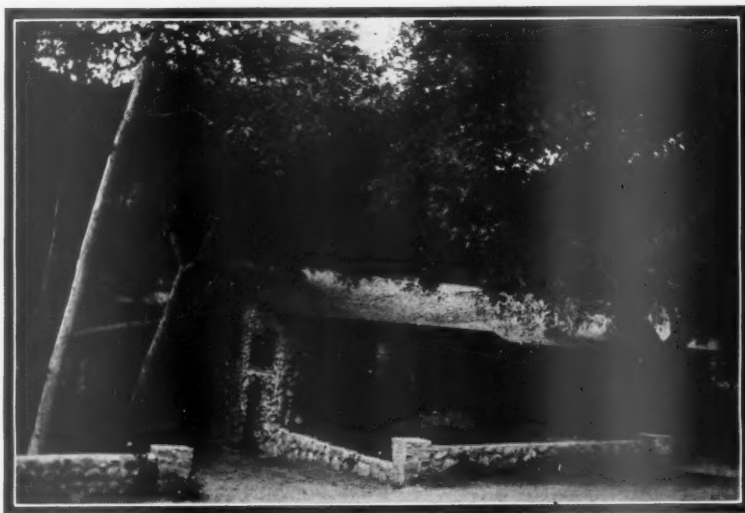
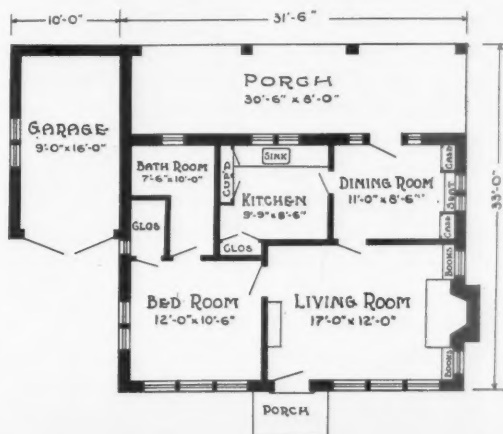
tection both against the weather and against possible mischievous depredation.

The ordinary mountain cabin is small, often very small. Sometimes, in fact—at least in its early career—it will be comprised of only one or two rooms. In other instances, it may have three or four or even five rooms. Frequently it is built a room at a time, the beginning being made with a single, all-purpose room. Indeed, for the person of limited means

this is a very satisfactory way of going about the undertaking—if the start be made with the ultimate additions properly planned.

Possibilities in the matter of planning the room arrangement are, therefore, rather limited. The accompanying floor plans, together with the exterior views, show quite practical and convenient layouts for cabins of two, three and four rooms, which may be studied in detail.

A dining room as a separate division is, in mountain-cabin building, generally regarded as superfluous. Instead there will be a living room, often of very ample dimensions, in anticipation of the occasional entertainment of friends, which will also serve for dining purposes. This room, since sleeping accommodations are limited and there may be children or friends to provide for, is also advisedly equipped or furnished with a concealed bed of some kind, perhaps located in a special closet ready to be



This attractive mountain cabin is more elaborate, having four rooms and bath. It is built of cobbles, has a charming living porch, an attached garage, and is well-planned for convenience and comfort.

drawn into service when needed. The ideal mountain-home living room will further possess a fireplace. There may also, if one wishes, be built-in seats and possibly a few built-in shelves for books and magazines.

In addition to this main room there should eventually be an exclusive bedroom or sleeping porch and a small kitchen. The former, whether a closed room or a more-or-less open sleeping porch, is preferably planned to include a closet since space for storing things is always desirable during both occupancy and vacancy. The kitchen, though very small, will doubtless have shelves for (Continued on page 548)

# Rainbows of the Coast Range

By FRITZ SKAGWAY

NO ONE in our party knew who had built the little log cabin at the head of the trail by the Khatada River. No one knew to whom it belonged. But the wide door with the makeshift hinges of leather had no lock, often standing ajar to welcome the wandering trapper, stray prospector, or grizzly hunter. Made of rough logs, mellowed to the shade of rich, brown velvet, it had weathered the years and still stood bravely, a mute reminder of busy, happy days of long ago.

Dave, the leader of our fishing party into this wild, British Columbia mountain fastness, was of the opinion the big rainbow would be biting down at the dam thirty rods west of the cabin. We eased our packs to the ground, rubbed our sore shoulders ruefully and listened to his discourse. There would be plenty of time to cut wood, he thought, after we had caught a mess of fish for dinner.

Through a dim tracery of a trail we filed in Indian fashion, one behind the other, westward toward a towering mountain whose side was marked by an ancient slide scar. At some remote time melting ice from glaciers higher up had started a landslide which tore down the mountain, taking huge forests with it to the river-bed below, forming a narrow channel through which the water tore at a rapid speed. An old dam had been built above the narrows just before the World War and lay rotting in the roaring water while rainbow trout sported about in the cold, sparkling waters.



The little log cabin at the end of the trail, which was our camp—looking out on Khatada Lake.



The falls of the Khatada leap to the river below, singing in the sunshine as they rush to meet the blue waters of the Pacific.

We scattered. Some fished the rocks below the dam while others fished from the bank beneath overhanging firs and cedars. I chose a quiet spot in the still waters above the dam where I could cast far out with a single fly at the tip of the leader. At the very first cast I felt the telltale smash of a big fellow as he surged into that fly. It was a McGinty, a bit small I feared, but it held. The big rainbow leaped once in the fading sunlight, his great sides streaked with brilliant crimson from whence he gets his name. He made straight for the dam overflow, a most unusual thing I thought. I knew there were many snags, angleirons from the dam timbers, and spikes, to say nothing of various other species of junk that had collected above the overflow. Into this mass the trout headed as I tried frantically to swerve him from his purpose. I succeeded in heading him back but it was an effort. Away he went up stream, leaping twice before settling down to a long, steady tug of war that

made the rod bend double. With every leap I saw with keener sight his massive proportions. I wanted that trout more than anything else in the world.

Dave came into sight just as the big fish leaped, then discreetly withdrew to fish farther down the stream. My

rainbow turned far up stream and started for the opposite bank. I had out all but about twenty feet of line so knew this could not last for long. With a steady, relentless pull I drew him back until he headed my way. One moment he pulled hard and then the line slacked as he tore to-

named mountain of the Coast Range it lighted all the colors of the rainbow on his brilliant body. That was enough for me that night. I felt that to catch more would be wasting the bounty of this distant forest stream—something no sportsman cares to do intentionally. There was no telling how many the others had by this time and while we could keep the fish on the ice of the glacier back of our cabin it was not good policy to make a fish-hog of oneself, especially before these good friends who lived in this vicinity.

Dave and Jim had gone farther down the stream. I could see them pulling in small rainbow of a foot or more in length but while I watched I did not see them catch big ones. Dave passed around the bend under the dense firs and when just out of sight caught a nine-pound rainbow trout in a deep pool under the trees. It gave him a battle that lasted for some time. I did not see the struggle but his fish was larger than mine as we measured them by the light of our flashlights at the cabin that night.

We were high above the foaming Skeena River in the fir forests close to timberline. On this Alpine height huge cloudwaves break against the mountain



Salmon caught by James Parker, our young engineer of the *Full Moon*.



Big fellows from the cold, sparkling waters of Khatada in this wild British Columbia mountain fastness.



Jimmie proudly pulls in a nice one from Lake Khatada.

ward me. I reeled in the slack and stood ready for the next rush. It was not long coming. With a leap almost at my feet the monster started back toward the dam and the tangle of flotsam. I brought him up short that time. He was visibly weaker. Once he came to the surface and rolled heavily on his side but the sight of me sent him off in terror. Then he sounded and dove deep into the center of the stream bed. I pumped the reel and slowly drew him to the surface. This time he held, doggedly refusing to turn on his side. Inch by inch I brought him into the shallows, unleashed my landing net and made to land him. Gasping, he lay on his side, but the fight was not all out of that splendid body. As he felt the gravel scrape his side he stood upright on his tail and dove for deep water, my reel singing in well-oiled harmony with the rushing river. A little annoyed, I put the brake on the speeding line and drew him sharply up. It was no great effort to keep him coming and this time he turned on his back gasping as I slipped the net beneath his body. It required both hands to lift the fish to shore. He was a splendid specimen and enough for a meal for four. Just as the sun dipped behind the snowcapped peak of an un-

peaks, cling to its pinacles or rumble thunderously down echoing canyons. Few billows get back to the sea as mist. To see their toppling, falling, rolling is a high reward given to those who haunt the silent hills. These giant peaks were born in volcanic heat of ages past. Molten cataracts of rock

were heaved high into the heavens while golden lava flowed into the deep valleys, there to cool and mingle with the earth. Steamy canopies, chilled in sea mists, cascaded above them torrentially, and at last the mountains were born in pained, convulsive throes as the earth rolled its mighty ridges upward. Ill at ease in their lofty height and quaking



from the subterranean forces that reared them, the rocks themselves would crack and shatter in stony cataracts, falling from crag to crag, making steep slides and gentle slopes, all of which one may see today. Now glaciers clothe the higher peaks and melting snows feed the Khatada.

When the mists fall as snow on the chilly heights, the crags are loath to free them and every little valley and niche is crowded full of mist and snow. Cloud after cloud, storm on storm, drift on drift, are piled and pressed until the fleecy mists become solid crystal that creeps slowly down under the weight of centuries—a glacier that, as the warm sun

ing soil, the water soaks and is retained, the mud is filtered out for use in the growing forests and undergrowth rich in life-giving food in the form of berries and foliage for wild creatures which swarm the mountains. The tall trees soften the haste of the clouds, every twig is a clutching finger, every frond of fern or moss a staying hand in the mist. Falling snows are retained longer in the heat of summer when drought is on elsewhere. Rains sink into spongy beds, and the wild storms on the crest of the ranges form continuous little streams that feed the Khatada and other tributaries of the Skeena. Where trees are lacking there is but muddy



Nine miles in length, encircled by snow-clad peaks, Lake Khatada is fed by the mists, falling as snow on the chilly heights—and her clear, cold depths are rainbow-haunted.

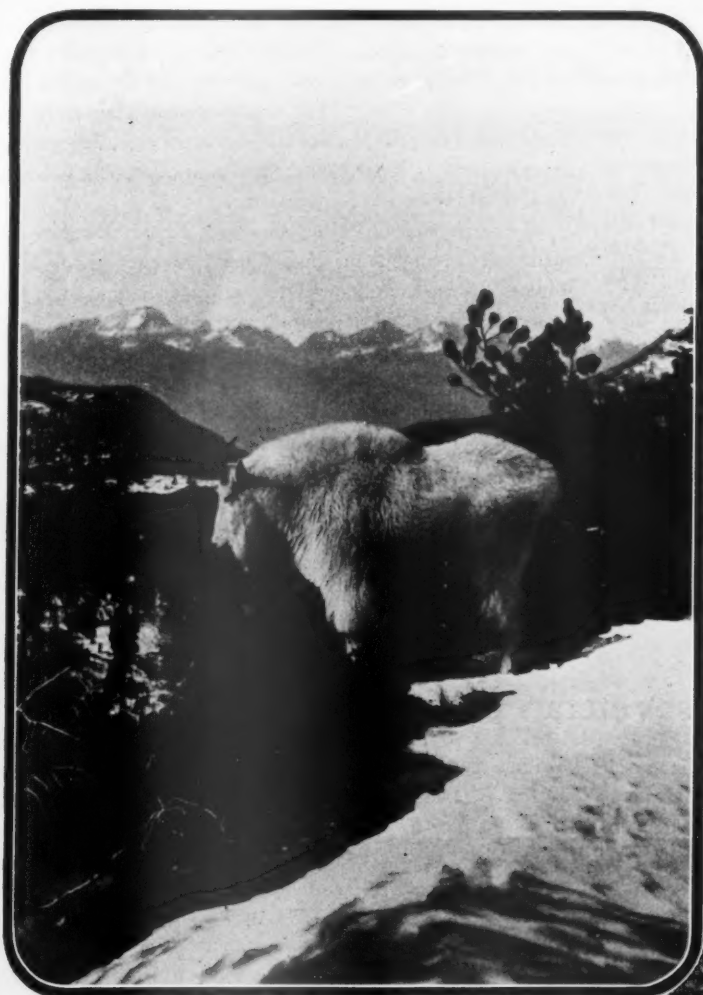
melts it, throws off cascades leaping to the rivers below, draining into the Khatada and then into the Skeena to rush in rolling lengths to meet the tides of the Pacific at Prince Rupert.

Were they left to themselves the hills and the clouds from their snows and rains would thrust down avalanche and mud-brown torrent torn from the bowels of the mountain slopes. No sparkling, rainbow-haunted cataracts could sing through the sunshine after the rain unless the water was curbed in its haste from the storm or the melting glacier. A check on the wasteful rush is made by the living, netted masses of evergreen forests. Spruce, pine and cedar forms a climbing verdure, a web of life to curb the flood, a fund against starvation, a store against famine, a blessing to the settlers, hunters and fishermen in the valley towns of the lower Skeena. Roots cling cooperatively and hold the slid-

turbulence—and drought.

Our open cabin door looked out on the Khatada. Close against the shack grew clumps of little Juneberry trees heavy with fruit. Nearby a little spring gushed forth at all times of the year, and from it trickled a stream flowing over the mossy, damp earth to the stream below. Tiny trout swam about in the icy waters of this spring eagerly snapping at chance flies and insects unfortunate enough to alight in the water.

Conies whistled from the boulders near our cabin, and little striped chipmunks, not at all like those of the East, scampered over the roof and peeked through the shake-shingled cracks at the queer humans below. Pack-rats squeaked and romped beneath the eaves, building strange nests of gnawed cedar bark in the gabled roof. Chattering magpies hopped and jumped about the door awaiting morsels from the cook's dishwater and garbage. A dark blue jay,



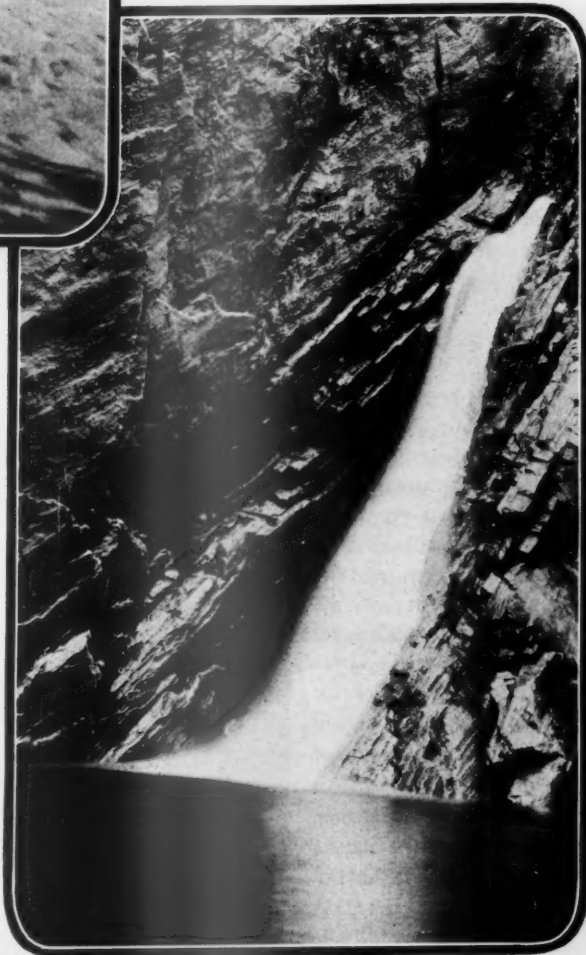
Hilleman

Mountain goats climb the precipitous heights and roam the stony cliffs, seemingly unafraid.

Hidden away behind a little iceberg, a most exquisite waterfall rushed over the top of the rock into a clear pool about an acre in extent. Far below thousands of big trout sported about in the depths.

like nothing I had ever seen before, sang in a treetop by our window. Woodpeckers tapped a staccato message from an old dead fir near the river bank. It was delightful to lie abed in the morning—when we had so many fish we knew that to catch more would be to waste them—and listen to the varied sounds about the camp. Then Stan would build the fire and soon the odor of delicious coffee would waft through the open doorway, creep along the floor like low-lying smoke and smite us full in the nostrils as it lifted to the bunks where we lay. That was the only alarm clock we needed. Out of bed, a hurried rush in the Alpine breeze of early morning to the river for a thorough wash and then back to dress. By then the trout would be simmering, bread would be toasting on forks of green withes and coffee would be set aside to settle.

What appetites those early British Columbia mornings give one! I can still taste that coffee and trout with here and there an egg frying in the trout-flavored hot butter. Each man was good for three or four eggs and a good, big fifteen-inch trout. The coffee cups made at least two trips to the pot, and then we relaxed and planned for the day's sport. Perhaps we would travel afoot to the towering glacier above. Or, as we did one day, pole the boat upstream and portage through a quarter of a mile of heavy going, through a forest trail to the upper Khatada Lake where we saw beauties never seen by tourists along the line of the Canadian National Railway bordering the Skeena far below. Though we were but seven miles from the Skeena and the railroad, I believe no one save the native hunters and whites of that vicinity has seen this upper lake. Nine miles in length, it lies between towering peaks of snow with timberline but a mile up the side. Goats in herds ramble over the stony cliffs seemingly unafraid so long as we



humans remained on the water. But when I sought to explore a canyon behind an overhanging tongue of glacier they scampered far up the heights and were lost in the mists of the mountain top. Here I discovered the most beautiful waterfall it has ever been my fortune to see. Hidden away behind a little iceberg, the waterfall rushed over the top of a rock into a clear pool of about an acre in extent. Perpetual ice lined the mouth of this cavern but above the roof was open and the sun shone on the rock wall reflecting in the pool. Far below one could see thousands of big trout swimming about in the depths. An outlet rushed through a cavelike hole in the bottom of the glacier to Khatada below. Where moisture wet the scattered bits of rotten wood and soil there sprang up little Alpine flowers. The air was clear as crystal.

This was a virgin world untouched by tourist. We did not go the full length of Khatada. We had no motor on our boat and we were content to bask in this Garden of Eden. When one arrives in Paradise there is no need to seek further for happiness. We had but to flick our flies over the boat side and a rainbow trout would strike. It was

a hunter's paradise. We saw indications of huge grizzlies but we were not prepared to look them up for at times their temper is uncertain and one must be heavily armed and backed by more rifles if he is to play around their territory. They hang about the glaciers feeding on the succulent growth of such plants as skunk cabbage and roots, dropping down to the level of the berries for a dessert.

The entire Skeena Valley country is a land of beauty unsurpassed in North America. What I have written is but a glimpse, like a scene viewed through a door that swings a moment wide. You see for a moment a chain of purple mountains, snowcapped, with dashing cataracts and lush, green meadows in striking contrast to the darker, fir forest about. Through that door is wafted to your nostrils the fragrance of the forest simmering in the sunshine, with a tinge as of incense which is the distant odor of burning cedar used in some wild campfire along the river bank. It is hard to believe that eastern coast cities are but six days distant. There is beauty unsurpassed in the Coast Range mountains. It is for all who choose to go.

## Indiana's Veteran Sycamore

NEAR Mt. Carmel, Illinois, but on the Indiana side of the Wabash River, stands a magnificent sycamore tree, one hundred sixty-eight feet high, thirty-three feet in circumference four feet from the ground, and eleven feet in greatest diameter above swollen base. It is the last remaining giant of a virgin stand of sycamore typical of the region, and is sadly in need of care. Dr. Robert Ridgway, of Olney, Illinois, wrote that he first noticed the tree some time during the early eighteen-seventies when much of the greater part of the flood-plain of the lower Wabash was still covered with virgin forest, and he noted it officially at that time in a report he was making on the native trees of the lower Wabash and White River Valleys, as follows: "There were twelve trees measured the same day in the bottoms of Gibson County, Indiana, below the mouth of Patoka Creek, which averaged 127 feet spread of top and 23½

feet in circumference, the extremes being 100 to 135 and 14 to 30 feet." The girth was measured above the "swell" at the



Photographed in September, 1928, this is the old Sycamore (*Platanus occidentalis*) in Gibson County, Indiana.

base (the largest tree was 42 feet in circumference near the ground). The pictured tree tells a sad story, for it represents not "the beginning of the end," but virtually the end of this magnificent virgin stand of native trees. It stands now alone in a large corn-field and has been exposed to the elements for so many years that a large part of its top is gone and its height much reduced, but it is still a most impressive tree. It is to be earnestly hoped that local authorities will not permit the loss of this monument to the virgin forests of Indiana, but will see to it that proper measures are taken for its preservation and protection as long as it may live. The tree has been nominated for the Hall of Fame for Trees of The American Forestry Association by Mrs. C. L. Hutchinson of Lake Geneva, Wisconsin, and the late Dr. Ridgway, of Olney.

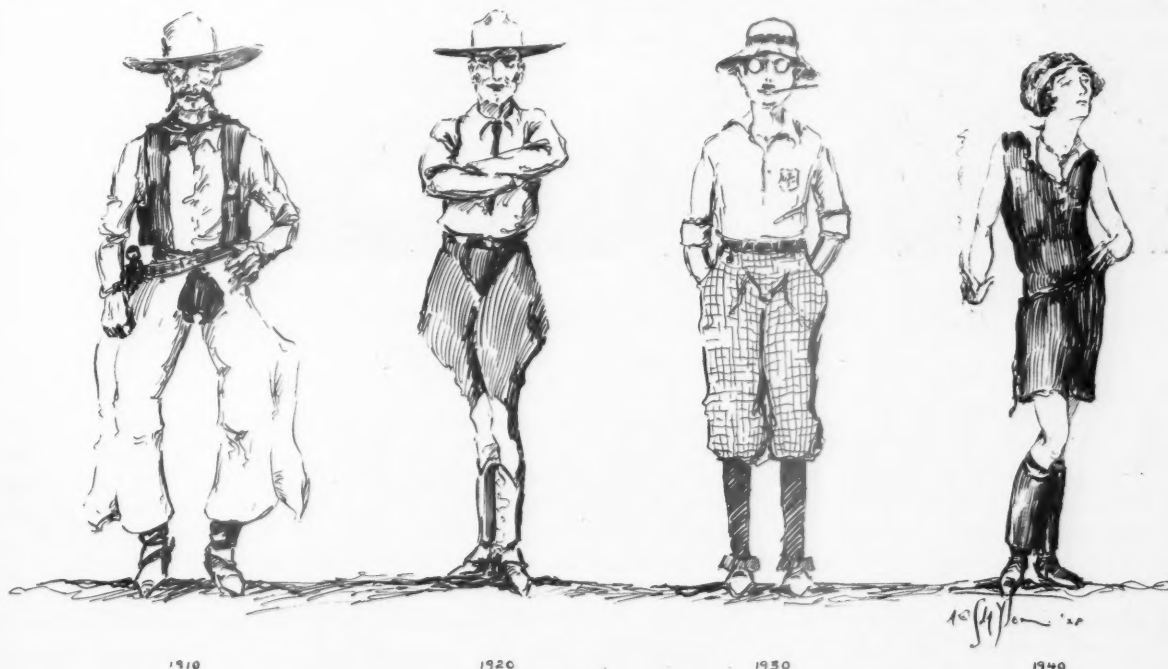


# The Evolution of a Forest Ranger

By ALFRED G. CLAYTON

"THERE'S sure been lots of change since I first started rangerin'," drawled the old-time ranger as he knocked the ashes from his pipe. "That was back in 1905. The Service was pretty new then and wasn't so particular 'bout the fellers they put on as rangers. About all we had to be able to do was to ride and pack a horse, both of which come natural. I reckon we were pick-ups, someone the govern-

wasn't hardly any what was overcrowded with book learnin'. They were a pretty fair bunch, but there was only one way they were like us. They were the devil to go mounted. I reckon they sort of inherited ridin' because they was all boys from western ranches. But instead of dressin' like ordinary waddies, most of 'em wore choke-bore pants. Everybody laughed, but they kept 'em on. But in spite of



ment had to have in a hurry to kind of take care of things.

"We had some tough ol' sinners amongst us, too, and don't you think we didn't. We were far from bein' Sunday School boys. But a feller didn't have a clean conscience them days unless he had done somethin' strikin'. Most of us had growed up on the range and been stock hands all our lives before takin' on the government job, and we all knowed more 'bout cows and horses than we did 'bout trees. Nowadays there's lots of cussin' goin' on 'bout us ol' timers mainly to do with the supposed fact that we didn't do no work.

"But that ain't hardly fair, and furthermore it ain't right because it ain't so. We done what we could and what was expected of us, and didn't get much for what we done, neither. Anyway, we didn't have much to do with, and jest between you and me, there was a whole lot of guys back East who didn't know jest what there was to be done.

"Along about 1910 things began to change somewhat, 'specially where rangers were concerned. Some of the ol' timers began droppin' out and a whole new crowd of rangers commenced goin' in for the work. These fellers were considerable different from what we was. Most of 'em were young fellers and some had a fair education, though there

their riggin' they were all that a ranger should be. There ain't many of 'em left as rangers. Some are supervisors and some are on their way to Washington.

"Then a few years later comes another change. Gosh, ain't it terrible the way the world and everythin' in it changes? It's a different layout entirely. These boys are mostly all from colleges, but even at that there are some pretty bright lads amongst 'em. This bunch ain't so much for goin' mounted as we ol' timers done. Yet, them as has to fixes up with pretty good horses. But by this time things are changin' so that automobiles is bein' used lots. These lads don't seem to take so much to ridin' outfits but instead wear pants that flap in the breeze.

"We ain't had no more changes yet. We ain't had time. But that ain't sayin' but what there won't be, for what with the changes I've seen, I calculate that in another ten years there'll be women rangers walkin' 'round in silk shirts and ridin' boots, and gettin' away with it. And they'll probably look back at these young fellers of today, who'll then be ol' timers, and say what a scurvy bunch of tripe they was. Yes, sir, this ol' world sure changes."



# Fire-Weather Service

By  
L. G. GRAY

## The Weather Bureau on Wheels—A New Fire-fighting Aid

Photographs by courtesy of the "Pasadena Post"

**A** RESTLESS ocean of air" aptly describes the earth's atmosphere. Our air ocean has its tides, eddies, waves, and warm or cold currents. Through these air movements nature produces the ceaseless changes and adjustments called "weather." Living as we do at the bottom of this vast atmospheric ocean, weather conditions exert profound influences on our activities whether these deal with commerce, agriculture, or forestry.

We wish to conserve forest lands for wood production and recreation, grass and grain lands for food supply, and brush lands for watershed protection. The chief enemy of the conservation of these natural resources is fire. Therefore, weather conditions favoring easy start, rapid spread and difficult control of forest, grass, grain and brush fires are of special interest and importance to conservation agencies. Such weather conditions are becoming known generally as fire weather.

The influences of weather on fire occurrence and behavior are evident from ordinary observation. Briefly, intense lightning storms accompanied by little or no rain cause many fires, particularly in the far West; but fires will not start, whether from lightning or from human care-

lessness, if forest fuels are wet from rain or snow. Neither will they start readily nor spread rapidly if fuels are damp from moisture absorbed from the air or from heavy fogs or dews. Without wind to fan embers, to furnish adequate oxygen for rapid burning, and to blow sparks fire control is not extremely difficult. On the other hand, periods of hot, dry, windy weather cause rapid drying of fuels so that fires start readily, and this drying plus the fanning effects of wind cause fires to spread rapidly and to be difficult to control. Exceptionally long-continued or severe drying periods in combination with strong winds cause occasional critical conditions which make human control impossible.

There are seasons of the year when fire danger is normally pronounced. In the far West the long, dry, hot, windy summers with "dry" lightning storms constitute the fire season. In the middle and eastern United States spring and fall are the most dangerous times. During the fire season, periodic changes in fire danger occur as the vast eddies of air called "highs" and "lows," hundreds and even thousands of miles in diameter, pass across the country and influence local weather by their air circulations. Changes of this kind



The "Weather Bureau Office on Wheels"—showing radio mast and antenna in operating position.

sometimes persist for several days. As the sun rises, shines and sets, causing the usual daily changes in temperature, moisture and wind, hourly variations in fire danger occur. During the day the air is usually dry, hot and windy, and fires spread rapidly; but during the night the air is usually moist, cool and quiet, and fires spread much more slowly, sometimes almost dying out. The general causes of fire weather are on a large scale, then; but local modifications may occur, due particularly to the influence of mountainous topography and large bodies of water.

Fire-protection agencies have long realized the importance of fire weather, and since weather is his business, they have enlisted the cooperation of the meteorologist to assist in the battle against fire. A "fire-weather" service has been organized, therefore, as a branch activity of the United States Weather Bureau. This service covers all of California and a small part of southwestern Nevada; and is engaged in collecting and making available fire-weather data from areas subject to fires, in studying these data to improve fire-weather forecast localization and to increase knowledge of weather and fire relationships, and in issuing fire-weather forecasts.

Let us see how some types of fire-weather information are used in fire prevention and suppression work. Through the use of information on climates, protection agencies prepare parts of their general fire plan. Climate determines the length and time of occurrence of the average fire season, indicates the areas of pronounced weather hazard, and in conjunction with fire data, aids in determining the number, placing and length of employment of normal protection forces. Through knowledge of weather and fire relationships, fire-fighters take every possible advantage of normal weather changes known to them. By concentrating their suppression efforts during the night, for example, they utilize favorable weather conditions, instead of working strenuously



The operator getting a "red hot tip" on the latest fire-weather developments via radio from Navy station NPG, Mare Island.

and often ineffectively during the day when weather conditions favor fire.

Nature does not always behave normally, however, and it is in connection with departures from normal weather that the meteorologist is of special service, since he can often forecast from six hours to three days in advance those weather changes that will materially influence fire occurrence. Weather forecasts are being used as aids in fire-suppression work in such ways as determining the necessity for employing additional fire-fighters or making reductions in fire crews; placing orders for additional supplies and equipment or canceling existing orders; dispatching fire crews to given fire sectors or holding them in readiness at central points; deciding on sectors where suppression attack shall be concentrated and on the specific strategy and tactics to be used.

The forecasts thus serve as aids in effecting economies in suppression costs. They are useful also in prevention and presuppression work, as aids in determining whether or not the general public using a forest area shall be warned regarding carelessness with fire or be temporarily excluded from the area; whether or not additional protection men should be employed to prevent fires or



Open for business—showing radio receivers and interior arrangement of the traveling "office." L. G. Gray, the fire-weather man, and M. H. Davis, Fire Dispatcher, on the Angeles National Forest.



in anticipation of fire outbreaks; whether or not brush burning, logging or mill operations which might cause fires shall be temporarily discontinued; and whether or not absences of members of the regular protection force shall be permitted. Through systematic daily weather observations during the fire season, protection agencies secure a very valuable local check on current fire-weather developments, of similar practical application both prior to and during fire occurrences.

One of the major activities of the fire-weather service is the establishment of special observation stations. Since the service was started in California in 1926, eighty-five special stations have been selected, equipped and operated. Many are on mountain peaks or at ranger stations within the National Forests, and are manned by lookouts and rangers who, in addition to their respective fire detection and suppression duties, carefully observe and record fire-weather conditions for current forecasting and protection uses as well as for future studies.

Fire-weather forecasts are issued daily at San Francisco throughout the fire season covering advance periods of from twelve to forty-eight hours. These general warnings are supplemented by special forecasts of exceptionally critical conditions and by longer-range outlooks covering advance periods of from three days to a week. The forecasts include in general terms the expected weather conditions as to relative humidity, temperature, wind direction, wind velocity and weather, particular mention being made of precipitation and thunderstorm possibilities. The probable effects on fire hazard are summed up by a statement that the hazard will be much, moderately, or slightly above or below normal.

These forecasts apply to general regions over which conditions usually average much the same. California has such a wide variety of climates, however, that the state is divided into eleven regions for fire-weather purposes. Unless a forecast is given wide and speedy distribution, its practical value is very limited. Forecast distribution is accomplished through the issue of nearly one thousand copies of the daily weather map, daily newspaper publication, broadcasts in both ordinary language and code from large radio stations, and telegrams or telephone calls direct to those most directly concerned with fire.

While these general forecasts have a variety of useful applications to fire work, as already discussed, they are not sufficiently specific and localized for small fire areas to be of maximum usefulness in direct fire-suppression work. Localized forecasts under ordinary circumstances cannot be made by the district forecaster, since he may not be familiar with local conditions, has relatively few observations to depend upon, and is charged with the work of forecasting for a variety of special purposes other than fire protection. A local meteorologist at the fire having available only local indications would also be unable to consistently localize forecasts. However, if the local meteorologist is personally able to see the topography, cover and fire conditions peculiar to each case, and in addition has available the data collected elsewhere, he can issue specific fire-weather forecasts adapted to fire-suppression use.

Realizing the truth of this situation, the United States Forest Service and the California Division of Forestry are

cooperating with the Weather Bureau in equipping and operating a special truck for service in California. With its equipment and personnel, this truck is a weather bureau office on wheels, which travels to fires instead of staying at a remote fixed point to provide forecasting service.

As has been mentioned, the availability at the fire of the detailed information collected at the district forecast center is vital for field forecast work, and a quick and inexpensive means of communication is therefore the first essential for successful operation of the unit. Radio stations operated by the Navy Department already cooperate with the Weather Bureau in broadcasting weather data for the benefit of mariners, aviators and others whose businesses require current, detailed weather reports. The extension of this use of radio to fire-weather work seemed to be the best way to maintain communication. Experimental radio receivers covering three wave groups were built and installed and are being used by the unit with very satisfactory results.

It will be of interest to trace briefly the steps in the rather remarkable system used in bringing data from wide areas to the fire. Every day at 5 A. M. and 5 P. M. Pacific time, observers throughout the United States, Canada, Alaska, the Hawaiian Islands, and on vessels in the northeast Pacific Ocean take their observations of temperature, air pressure, wind direction, state of weather, wind velocity, precipitation, relative humidity, clouds and thunderstorms. These observations are coded in a few words, and are transmitted by telegraph and radio to collecting centers, where they are sorted and each report is sent over a special telegraph circuit to selected stations. The district forecast center at San Francisco receives most of these reports. At the same time, special reports from fire-weather stations in California are coming in by mail, heliograph, telephone, radio, teletype and telegraph or combinations of these forms of communication. Supplementing all these surface observations, upper-air data from about fifteen far-western stations extending from Canada to Mexico are received by telegraph, radio and teletype. These upper-air observations, secured by means of small "pilot" balloons, show the direction and velocity of the wind at given levels up to elevations of three miles or more, and so supply important forecasting information regarding the third dimension of the atmosphere.

All available data are then charted on large maps in such ways as to show the current weather conditions in detail, to show the changes during the past twenty-four hours, and to show the departures of current conditions from the seasonal normals. The district forecaster then studies his charts carefully, and knowing some of the important fire-weather conditions that have followed similar types of charts, and having checks on probable repetition of the "type" through special observations and his knowledge of meteorological physics and of his district, he can then issue the general fire-weather forecasts. Within fifty to seventy minutes after taking the observations, except for distant foreign countries, all reports are received, the data are charted during this period and shortly thereafter, and often within ninety to a hundred and twenty minutes, the forecasts are ready and are being distributed.

(Continuing on page 524)

# Trees for the Roadside

By G. H. COLLINGWOOD

AMERICANS who have traveled in Europe frequently refer disparagingly to the condition of our roadsides as compared with those of the older continent. "There ought to be a law—" is one way they start to describe their plans for encouraging roadside planting. Many whose travels are limited to our own continent are also wondering why so many miles of concrete roads must be exposed to blistering heat and sweeping winds with scarcely a bush to break the uncomfortable monotony. This increasing attention to the borders of our roadsides is probably an indication that American civilization is advancing in culture as well as age. Another evidence of public opinion is a recent statement by Thomas H. MacDonald, Chief of the Bureau of Public Roads. Mr. MacDonald referred to the power of the Government to participate with the states in the cost of planting shade trees along the federal-aid highway system. Although a number of states have developed plans for such work none have taken advantage of the proffered aid. He voiced a new point of view for highway engineers when he said the "planting of suitable trees and shrubbery along all sections of the federal-aid system where such growth can be maintained should be regarded as a necessary eventual step in the improvement of the system." He even went so far as to say "the satisfaction of this instinctive desire for beauty is an object that should no longer be ignored in our public works, and especially in the improvement of our highways." That is a strong statement to come from the engineer who guides the actions of America's greatest road-building agency. It indicates we shall hear more about roadside planting and the care

of trees already existing along the highways. A brief survey reveals the fact that in more than half of the states comprising three-fourths of the area of the country, roadside planting is carried on in a hit-or-miss way, with no legal recognition. Fortunately the states with highway planting laws are well

scattered over the country. Examples of attractive roadsides in California, Connecticut, Delaware, Nebraska, North Carolina, Oregon, Ohio, Michigan, Missouri, Maryland, Massachusetts, and Wisconsin will be seen by tourists. Some will be stirred to ask why their state is not doing something.

California's law, like that of Maryland, establishes cooperation between the state highway department and the state forester. California encourages local citizens or civic associations to appeal to the highway department for permission to plant trees along a highway. They do so with the understanding that they must pay the cost of establishing the trees and maintaining them during their first year. The trees are planted under the supervision of the state forester but located in accordance with the advice of a highway engineer. Usually they are grown in the nursery of the state forester.

Enough money is raised from private sources to permit the highway department to water and cultivate the trees for a full year after they are planted. Thereafter the state assumes responsibility for their care. A recent report shows that the division of highways has nearly 130,000 trees under its maintenance.

In Maryland the state forester looks after all trimming and planting, and supervises the tree work of wire-line companies. Stock for roadside planting is grown in the state forest nursery.

Pennsylvania deviates

*The series of articles on tree planting and tree care has been temporarily interrupted since the appearance of "Shade Trees—Their Kinds and Care" in the April number of AMERICAN FORESTS AND FOREST LIFE.*

*"Trees for the Roadside" follows naturally the discussion of shade trees, and in turn will be followed by:*

*"The Making of a Town Forest."*

*"Memorial Trees and Groves."*

*These three form a unit of particular interest to civic groups. The author will attempt to suggest ways for greater development along these lines.—EDITOR.*



Photograph by W. F. Clayton, Jr.

Future travelers may have to miss the shade of this row of maples because the trees were planted so near the road center that the right of way can be widened only by their sacrifice.

a little from this plan by attaching a tree specialist to the highway department. His responsibilities go beyond the actual planting of trees and include satisfactorily covering embankments with turf or flowering shrubs and vines.

The State Highway Commissioner of Connecticut has exclusive jurisdiction over trees, shrubs and other vegetation within the highway limits. He has authority to plant and properly care for this vegetation, and to represent the State in taking possession of trees in woodlands bordering the state highways. In doing so the owners of the trees may be reimbursed according to the stumpage value. Wherever possible existing trees and shrubs are saved, and usually native species are planted. New Jersey and Michigan have laws placing much of the responsibility for tree care upon county commissions. The commissioners are responsible for the condition of the roadside, and may employ a capably trained man to take charge of the work. He is expected to plant new trees where necessary, but his primary function is to care for existing trees and roadside vegetation. The commission may draw up and enforce regulations which will enhance the beauty of the road-sides, keep them clean and maintain complete equipment for spraying and pruning.

Frequently the state or county officers in charge of roadside development have been pressed by public opinion to remove advertising matter from within the right-of-way. Usually they are ready to cooperate with this popular demand. In some cases the work of removing the signs has been done by employees of the commission, but usually it was supplemented by Boy Scouts, garden clubs, and similar organizations. It must be recognized that seldom can anything be done beyond the limits of public ownership, but as the public realizes the undesirable features of roadside advertising voluntary cooperation is extended. Cases exist where property owners have refused permission to erect signs or to allow them to be nailed to trees on their land, and other cases where advertisers have given up the use of promiscuous billboards.

Were more people aware of the injury inflicted upon trees by nailing signs upon them, the feeling against them would be even stronger. Wounds are often made which open the way for wood destroying fungi and insects. Strangely

enough, small sawmill men are often the most vehement in their attacks upon those who would nail signs to trees, for as the tree grows the nails become embedded in the trunk. Years later the tree may be cut for its saw logs, and the nails are frequently the cause of costly accidents in the mill.

Roadside planting is so complex as to demand the best thought of those interested. It involves more than the planting of trees or even the care and protection of trees now growing along the highways. Those who would effectively do this work must vision the future demands upon the highway, show sympathetic recognition of the rights of owners of abutting property and plan for wide views as well as shade.

In years past citizens planted too close to the right-of-way to permit the demands of modern traffic. Frequently rows of magnificent trees have had to be sacrificed for this reason alone. In order that growing trees may be as far from the center of the highway as possible they should be planted about a foot from the outside property line. If the right-of-way is forty feet wide or less the trees may be planted on private land if an option can be secured from the owner so that the land may later be acquired by the state. Fortunately highway engineers are recommending wide rights-of-way—even 500 and 600 feet on some trunk roads.

Too often the trees are so close in the rows that they cannot develop satisfactorily. Nearly all of our shade trees may be planted sixty to eighty feet from their nearest neighbors, and in level farm country where there is competition

with farm crops, they may be planted 100 to 120 feet apart. Wide spacing will assure large, spreading crowns, and will eventually develop most beautiful specimens.

Motorists traveling from thirty to sixty miles an hour welcome a shaded strip of highway, but often after a stretch of trees an open strip provides a desirable change. Open spaces offer views across the country and suggest the possibility of more or less irregular plantings, as well as definite lines of trees. Any form of planting, however, should continue for a considerable distance rather than to be made choppy by frequent breaks.

Long stretches of level land may be planted with regular rows of trees, but rough and hilly land is especially suited to group plantings which more or less resemble haphazard ways



California has adopted the Eucalyptus tree as her own, but these would have grown better had they been spaced wider and set farther back from the road.



of nature. In either case flowering shrubs and plants between the trees are often highly desirable. These, together with sod along the margins, are all part of a complete planting program.

The hazards of the road should always be kept in mind, and important highway intersections should be left without trees for fully 200 feet. Greater dangers which accompany railroad crossings warrant leaving open a stretch of 500 feet on either side of the intersection.

Conditions over the United States are too varied for one to attempt to recommend individual trees for planting, or even to describe their qualities under different conditions. There are, however, certain fundamentals that should be kept in mind when selecting trees. They should first of all be adapted to the climate, to the soil and to the local drainage conditions. This naturally favors locally known, native trees, but does not rule out those from other regions which may be adapted to the immediate situation. Examples of successfully adopted exotics include several of the eucalyptus family which have become so definitely associated with the California landscape as to seem native. The London plane, or European sycamore, has adapted itself to American conditions and proves especially satisfactory where smoke, factory fumes or dust discourage the more tender-leaved, native trees.

Following the dictates of soil and drainage, the trees along a highway may differ according to changing site conditions much as they would if they had sprung up naturally. This indicates the importance of learning how to work with nature, rather than to struggle against her laws. Trees may also be chosen with reference to their form, the character and color of their leaves and blossoms. As a rule, naturally high-headed trees, or those which can be trained to that form, are most desired. Occasionally, however, a low-growing tree, or one which holds its branches down to the ground, is suitable. In the South the palm has been used extensively and lends a characteristic element to the landscape. Pines are not generally used, but in some portions of the North they have proved effective. Evergreens may be encouraged to hold their lower branches and so prove an effective windbreak.

It is not necessary to attempt to plant large trees. Usually the rapidly mounting costs which accompany increase in size

of tree stock encourage the use of small trees. Those with stems one inch to three inches in diameter and eight to twelve feet high are usually recommended. They can be dug from nearby woods, but they are never as satisfactory as trees grown in a well-managed nursery. Nursery trees that have been cultivated and transplanted from time to time have a ball of well-filled roots which quickly adapt themselves to new conditions. Woods-grown trees have been forced to compete with native vegetation, and consequently their roots spread out for a long distance, with feeding roots at the outer ends. When they are moved from the woods most of the tiny feeders are cut off. This can be partially corrected

by transplanting them into a garden to grow one or two years with water and cultivation so as to establish a good root system. But if time and uniformity are desirable factors it is usually better to secure the right kind of trees from a reliable nursery.

Those who plant trees do so that others who come after may have greater pleasure. It is an undertaking that requires energy to get started as well as to accomplish. Accordingly, whenever possible long-lived trees should be selected. A list of these would surely include certain of the oaks native to the region, the elms, hard maple, basswood, tulip trees, sycamore, horse chestnut, and hackberry. In each locality others might be added to such a list. Usually trees bearing nuts or fruit are discouraged for roadside planting because the public has an idea that anything growing on the



The gothic arch of rows of elms is a recognized characteristic of many New England roads and streets.

highway is their property to molest or even destroy. Much may be said, however, in favor of black walnut, whose sturdy form has enhanced many a roadside and whose nuts have given joy to countless boys and girls. This tree is suggested as one that will adapt itself to many of the widely varying conditions of our country.

Some trees develop into community nuisances by filling drain tiles and wells with fibrous feeder roots. Usually these are fast-growing trees and include the elms, poplars, willows, and eucalyptus. Rather than discourage their use they should be planted where there are no drains or wells to be interfered with. Under these conditions the trees will add materially to the beauty of the landscape.

Standing as we are on the brink of untold possibilities of radio, one might be inclined to ignore the poles along the road. It is probable, however, that power and most of our

messages will have to be transported over pole-supported wires for years to come. The highway is usually a right-of-way for the pole companies, so that the roadside planter will have to recognize the existence of poles in his plans. Carelessly planted trees will soon interfere with the wires and make pruning necessary. Wherever possible the trees should be planted on the outer limits of the right-of-way and far enough back from the poles and wires that they may grow without obstruction. Where this is not possible, or where the trees are already in position, carefully supervised pruning as in the case of Michigan and Maryland is urged.

This leads to the suggestion that more people should realize that shade trees need continual care and attention. Park superintendents and many private owners recognize this fact, but it has scarcely entered the public mind. Every dollar which may be spent to secure a good tree should be followed by at least two dollars to be used for its planting and subsequent care. Considering the life of a shade tree, this is conservative, for it includes watering when necessary, cultivating around the base of the tree, protecting it against mowers, fire, livestock, insects, and disease, as well as occasional pruning that the head may rise well above traffic. There is a constant need for bolstering the growing public interest in the establishment and care of trees along the roadsides, for there is a tendency to leave the initiative to the state. Unfortunately this is impossible in more than half of



**Above:** Trees planted as close as these pin oaks will need to be carefully pruned.

**Below:** These Monterey cypress form a dense, curved screen.

the states until some state officer has been given legal responsibility. Merely to pass a law would be futile, because a poor law may be worse than none. Local citizens and civic associations can take such initial responsibility as will result in local demonstrations of effective planting. These should be under the guidance of a competent landscape architect or forester who will work in cooperation with the local highway authorities. When these demonstrations precede the passage of state laws they may serve as a basis for laws that will be passed.

An outstanding demonstration of a modern highway with surroundings as carefully planned as the roadbed is being constructed by the United States Bureau of Public Roads, and will be completed in 1932. This is the Mount Vernon Memorial Highway to follow along the Potomac River connecting the Arlington Memorial Bridge with the Mount Vernon estate. For the most part the 40-foot pavement

will be within a right-of-way whose minimum width is 200 feet. As far as possible the natural landscape will be preserved, and where desirable, the way will be planted with ornamental trees and shrubbery.

A right-of-way width of 200 feet gives no foot-hold for indiscriminate arrays of refreshment stands, while signs and billboards will have practically no chance. Where necessary to protect against encroachment of undesirable structures a wider right-of-way can be acquired. All advertising signs can be relegated to the privately owned land back from the road, and wherever objectionable they may be screened out by planting trees and shrubs upon the public property. The public is further protected by a recent Supreme Court decision in Indiana which upholds the right of a city to prohibit signboards in areas near parks and boulevards. (General Outdoor Advertising Company vs. City of Indianapolis

et al; Indiana Supreme Court No. 25253.) The decision definitely recognizes that the surroundings of a park or boulevard should be kept in harmony wherever it is practicable to do so.

Public opinion favorable to roadside trees has caused highway engineers and line men to consider the trees that grow along the right-

of-way. The change has come about with the increasing recognition that highways are something more than means of getting from one place to another. Such an ideal of beautiful highways can be realized by caring for existing trees and shrubs, and by placing new plantings according to the best thought of landscape architects, highway engineers and the tree-conscious portion of the public.

Books and bulletins on roadside planting include J. M. Bennett's "Roadside Development," and the United States Department of Agriculture bulletin, "Planting the Roadside," by F. L. Mulford. Chapters in the American Civic Annual, edited by Harlean James, and in "Trees as Good Citizens" by Charles Lathrop Pack are recommended. Other publications include the "Roadsides of North Carolina," published by the American Nature Association, and publications of state forestry departments and colleges of forestry and agriculture.

# Farm Forestry in Finland

By EINO SAARI

*Professor of Forest Economics, University of Helsinki*

THE farm problem is as much on the map in Finland as it is in the United States. Although the forest industries play an important part in the economy of both countries it is rather peculiar that the value of forestry in the individual farmer's economy has not been given proper consideration in either country until very recently. This appears due to the fact that both the direct and indirect income from forestry to the farmer has been considered an extra and uncertain income rather than one that could be relied upon currently. This erroneous idea is inherited from the pioneers to whom the forests in many cases were a nuisance.

The situation, however, has changed in Finland. The need of wood as raw material has increased tremendously and the income from forestry is beginning to be considered a regular item in the farmer's economy.

Comparatively, Finland is one of the richest forest countries in the world. The total forest area of the country is sixty-two million acres or about three-quarters of the area of the country. One-half of the forests are owned by farmers whose farms in the great majority of cases are small. The soil and climatic conditions in most sections of the country make agriculture rather unsatisfactory from the standpoint of labor required and crops obtained. It can therefore be understood why only twenty per cent of Finland's farm area is tilled land, seventy-two per cent is forest land and eight per cent waste land, mostly open swamps.

In order to investigate the farmer's economy, a special system of accountancy has been introduced on a number of farms in different parts of the country. The agricultural results are published yearly by the Board of Agriculture. Data concerning farm forestry have been gathered for some years by the present writer in a special investigation which

has supplied the figures given in this article. Broadly speaking, the annual growth of all forests owned by farmers is about double the amount needed for their home consumption. As the farmer's forests are generally well situated as regards markets, almost all wood not needed on the farm can be sold. The net cash income from sales of wood in 1925 averaged \$317 per farm. The urgent need of this income is evident from the following figures.

The net cash income from agriculture and dairy farming in 1925 was on the average \$285 per farm. The net cash earnings outside the farm, chiefly in connection with logging operations, were \$139 per farm, or a total of \$424 exclusive of forestry. The cash expenditures for food and living expense of the farmer's family averaged \$471, to which must be added \$171 for taxes and interest on borrowed capital, making a total of \$642 or \$218 more than the revenue from all sources other than the forests. These figures clearly indicate that the agriculture and dairy farming alone do not provide enough money for operating a farm and paying all the living expenses of the farmer's family. It should be

pointed out that the income from the farm in kind plays a great part in the farmer's economy and the figures here indicate only the monetary transactions. In any case it is clear that without any other income than that provided by agriculture and dairy farming the standard of living on the farms would be low and might in large parts of the



This is a typical Finnish farm. The weight of forestry as an item in the economy of the farmer in Finland is important and is becoming more and more generally recognized.

country approach a point at which life would be impossible. The capital expenses of the farmers for new buildings, land improvements, machinery, and clearing of new fields are to a very large extent dependent on the income derived from sales of wood. It has been calculated that the total capital investments of all farmers during the last ten years roughly



equal the total sales of wood from farm forests during the same period.

Owing to the long and cold winter the need of fuel is very great and wood is practically the only fuel used on the farms. As regards building materials wood is most commonly used in the country districts. A considerable amount of wood is still used for fences and other requirements. According to investigations made in the middle of the last decade the quantity of wood used annually on the farms in southwest Finland was 226 cubic feet solid measure per capita.

A new investigation is being made of the wood consumption in the whole country. A farm which cannot obtain sufficient wood for home consumption from its own forests is an exception. In farm settlement, it is now recognized that the new farms must have at least sufficient forest to provide for their home consumption of wood. With the help of the material collected from the accountancy farms referred to, the writer has made an investigation of the net operating income from farm forestry in the southernmost part of Finland. Both income from sales of wood and income in kind (wood for home consumption) have been taken into account. In the expenses both direct cash expenses and the share of forestry in the total labor account of the farm have been included.

The net operating annual income for 1924 to 1926 was on an average \$1.71 an acre of forest land. The net operating income from agriculture and dairy farming for the same years and farms was \$5.58, or 3.3 times larger than that for forestry. Consequently a farm which has 3.3 times as large a forest area as its tilled land obtains on an average half its net operating income from forestry. If the forest area as compared to the tilled land is larger, the farm lives more on

its forests than on its agriculture and dairying. And this is indeed the case on a large number of farms especially in the central and northern parts of the country. The most important subsidiary use of forests for the farmer is in grazing, which is still quite common in Finland, although there is a

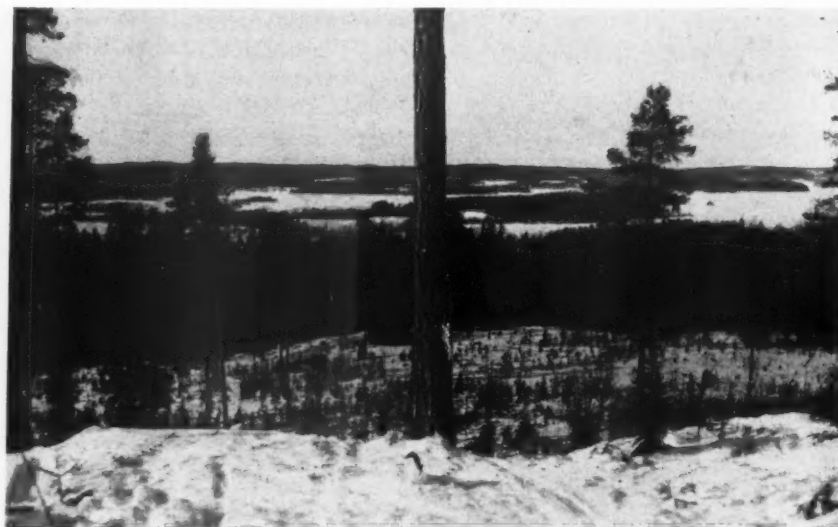
strong movement in favor of intensified grazing on areas separated from forests and especially prepared for pasturage. Hunting and fishing also give some income to the farmer, as do berries, fungi and lichens.

Owners of small farms, especially if the forest does not yield any surplus over the home con-

sumption, are to a great extent dependent on income from outside work. During the summer their labor is needed on the farm but during the winter they find work in the state forests, in the forests of lumber, pulp and paper companies, and in the forests of large estates, where there is a great demand for workers in logging operations.

An inquiry into the forest labor question showed that about four-fifths of the workers in the logging operations in the districts investigated in South Finland were farmers. In North Finland the farmers formed about one-half of the workers in the logging operations. In remote districts in the northern and eastern parts of the country where natural conditions for agriculture are unfavorable, these logging operations are quite indispensable for the life of the farmers. If the crops fail, logging operations are almost the only source of money income for those whose forests are too small to give any income from sale of wood.

It is not too much to say that in large parts of Finland agriculture would not be possible at all without farm forests. (Photographs by courtesy of "The Public Educational Bureau of Forestry.")



A winter landscape on a farm forest in Finland. Natural regeneration is seen from seed trees which have been left on the cutting area.





## EDITORIALS

### Gaining by Giving

UNQUESTIONABLY public opinion is overwhelmingly in favor of greatly increasing the area of publicly owned forests. The National Forest system itself, extensive as it is, is by no means complete. There are millions of acres of private holdings which in the interest of all concerned should preferably be transferred to Federal ownership.

In planning ways and means for accomplishing this much desired end we are prone to think mainly in terms of Congressional appropriations which will permit the expenditure of millions in direct cash purchases. Sometimes we recognize the possibilities of the "General Land Exchange Law" which for the consolidation of existing National Forests permits the Forest Service to trade lands or stumpage on a basis of equal values for other tracts which are more strategically located.

Seldom, if ever, do we give thought to Section 7 of the Clarke-McNary Law which offers the timberland owner an opportunity to donate his property to the Federal Government for national forest purposes, and permits him to retain under certain restrictions those timber cutting rights which to him are the real values involved.

The question naturally arises, "Why propose to a man that he donate a thing which Uncle Sam stands ready to pay for in cash, or trade for with other land or timber of equal value?" By way of an answer—one stands to gain by giving now, more than he would lose by waiting an indefinite period in the vague hope of realizing a fictitious price for his property. The ownership of forest land these days—even of virgin timber of high intrinsic value, is not always an unmixed blessing. The annual taxes and fire protection charges, pending the harvesting of the crop, often constitute a cumulative addition to the original investment that the realization value of the stumpage when it is finally cut cannot offset.

Undoubtedly cases exist where savings greater than the sale value of the cutover land would follow its donation to the National Forest. This is more easily seen when one realizes that the owner may continue to exercise his cutting rights over a reasonable period of years. On his part he must comply with simple silvicultural rules to the end that the forest may be left in good growing condition preparatory to the production of a second crop. This is not an example of looking too closely into the mouth of the gift horse, but rather a case in which the proposed gift may be held as a

trust, with the United States Forest Service acting as trustee to guarantee satisfactory management of the property pending its receipt. Surely a gift of value reflects more credit upon the donor than one which is virtually valueless.

The difficulty with the plan, and the reason why advantage is seldom taken of it is simple. While the law permits the donor to continue cutting timber or making such other use of the property as has been his habit, it does so with the understanding that the land will remain subject to taxation during the period it is so used. In all fairness the federal government could offer no other plan, for during this period of use all receipts from the area go to the donor. Only after the property is deeded over to the federal government do receipts from forest uses go to the Forest Service. When that is accomplished, thirty-five per cent of the gross receipts will be paid to the state and local governments for schools and roads. Until then there is nothing to pay and the responsibility rests with the state.

This would seem to focus the blame upon the heavy burdens which forest owners must assume under the application of the general property tax. If the states would substitute for the annual property tax based on the value of the standing timber another in the nature of a comparable yield or severance tax, to be collected when and as the timber is cut, the problem would be in a fair way toward solution. This must be done by individual state action and in most cases will require new legislation.

Naturally, the gain to the owner, through saving on annual tax payments, would mean a corresponding loss of annual revenues to the county or township. Such loss, however, would be only temporary and would be more than compensated by the assurance that the lands, under National Forest management, would become a perpetual source of revenue. The continual sale of the successive new crops of timber would return to the state and local political units, under existing legal provision, thirty-five per cent of their gross receipts. The states are urged to consider the Donation Clause of the Clarke-McNary Law and plan more satisfactory forest tax laws. If a law of state-wide application cannot be passed, legislation applying to areas acceptable to the Federal Government is suggested. That would be real cooperation.

# Association Medal Winners

**W**INNERS of The American Forestry Association medals, awarded in the forestry contests held in the United States and Alaska, represent American youth awakened to appreciation of forestry ideals and aspirations. They are victors in competitions worthy of their metal—competitions which have contributed to the development not only of leaders of tomorrow but of an enlightened public.

They have been presented with medals which are their permanent possessions; the schools or clubs which they represented have been given medal plaques; and one young man was congratulated in person by the President of the United States.

In all cases, except one, forestry essay contests were held in which students of the grammar schools or high schools, or members of juvenile organizations took part. Forestry projects were undertaken in Wisconsin, the prize having been awarded to the outstanding school, rather than to an individual.

The girls and boys who won medals for themselves and brought possession for one year to their schools or clubs of the large bronze medallions mounted on walnut are: Isabel Wilson of the Bureau of Education Schools of Kake, and Louise Harlan of the Territorial Schools of Nome, Alaska; California Young of the Girls High School of San Francisco, California; Benjamin DeRoy, Jr., of the William H. Hall High School of West Hartford, Connecticut; Hannah Cox of Cullowhee High School of Cullowhee, North Carolina; Jane E. Lyons of the Harding Junior High School of Oklahoma City, Oklahoma; and Ewing Tune of the Una 4-H Club of Una, Tennessee. The Laona Public Schools of Wisconsin made the greatest contribution to forestry and conservation in that state and have been awarded the medal plaque.

Individuals who have been presented with small bronze medals are: Roald Capstead of Ketchikan, and Lorena Lincoln of Kotzebue, Alaska; Marjorie Curtiss of Torrington, Connecticut; Jesse Dudley of Washington, North Carolina, and Violet Lucile Jordon of Woodlawn, Tennessee. Their prizes are similar in design to the large medals, bearing a reproduction of the general Sherman tree.

The territory of Alaska was the first to conclude the forestry contests which were held for pupils of the eighth

grade and under, who had completed lessons prepared by the Forest Service and had taken field trips. Louise Harlan and Lorena Lincoln chose as their subject "Forest Fires," and Isabel Wilson and Roald Capstead selected "Alaska's Forests." Governor George A. Parks sponsored the competition, which was promoted by C. H. Flory, District Forester at Juneau.

Oklahoma was the first state to announce the winner of The American Forestry Association medal. This was before prizes were awarded both to the girl and boy writing the best essays on forestry. The contest which was under the auspices of the Oklahoma Forest Commission had for the subject, "The Part Forestry Can Play in the Development of Oklahoma," and was promoted by George R. Phillips, State Forester.

In California more than 11,000 pupils in the public schools

participated in the essay contest which was sponsored by the Stop Forest Fires Committee of California, of which C. C. Cottrell is secretary. The subject was "What I Will Do to Help Prevent Forest Fires."

The title of the essay which won for the Connecticut youth the bronze medals of the Association, and, during a visit to the national capital the congratulations of President Hoover, is "Why We Need Forestry in Connecticut." The State Park and Forest Commission sponsored the contest and Austin Hawes, State Forester, directed it.

High school pupils of North Carolina wrote on the weighty subject "Develop a Suitable Woodland Taxation Policy for North Carolina." The contest, which was held under the auspices of the State Department of Conservation and Development, was directed by J. S. Holmes, State Forester.

The University of Tennessee Agricultural Club, in cooperation with State Forester R. S. Maddox, conducted the forestry contest in that state for 4-H Club girls and boys.

The outstanding piece of forestry and conservation work which brought honor to the Laona Public Schools of Wisconsin, is a forestry project of eighty acres. On this area 32,000 seedlings have been planted, fire lanes constructed, slashings burned, a nursery and a bird refuge established. The contest was sponsored by the Extension Department of the State College of Agriculture, at the University of Wisconsin.



Benjamin E. DeRoy, Jr., a medal winner of Connecticut, who recently visited Washington and was personally congratulated by President Hoover.



# Greenery Hunger

## And How It Brought About the Transformation of the "Richest Hill on Earth"

By F. J. CLIFFORD

NOT a tree, not a flower, not even a blade of grass was to be found in Butte, Montana, prior to 1894.

The reason was embodied in the poisonous arsenic-sulphur fumes oozing from smelter stacks and "stink piles." True, the fumes represented a mighty wealth as they billowed skyward from the great smelters into which gold, silver, and copper ore poured, so rich that Anaconda Hill, on which the city of Butte was founded, was popularly known as "the richest hill on earth."

But there has been a transformation, in spite of the fact that the idea of Butte's treeless desolation is still harbored in the public mind. Indeed, just recently one of the leading magazines of the country pictured Butte as the only American city in which there is no living green thing. This may have fitted "the richest hill on earth," thirty-five or forty years ago. At that time the "stink piles," layers of ore and cordwood, were the offenders. When fired, the deadly sulphur and arsenic were released in a heavy pall that blanketed the city. Add to this the smoke from the smelter stacks.

nature to start things. Occasional picnics of Butte children held in Deer Lodge thirty miles northwest of the big mining city, furnished the first spark of the transformation. There the nature-starved youngsters could revel on green grass, stare wide-eyed at the flowers and marvel at the leaf laden trees.

"I lived in Deer Lodge at that time," said Mrs. W. I. Higgins, for many years a resident of the mining town, "and used to pity the Butte children. They were starved for a bit of real nature. They romped over the green grass at Deer Lodge and considered it a great privilege to pluck leaves from the trees, while flowers brought shrill cries of rapture. The birds were objects of delight and great interest for there were no feathered songsters in Butte those days. And the children were so pale-faced and thin, so different from the red-cheeked youngsters of Deer Lodge."

All of this became a pertinent subject of conversation when the mothers of the two cities foregathered in visits and club work, and while there is no way of measuring its in-



Anaconda Hill during the old days in Butte—no trees, no grass, no flowers, because of the poisonous fumes oozing from smelter stacks. No living green thing could survive the heavy and deadly smoke and fumes.

Accidents were all too common. Many teamsters hung lanterns to their horse's neckyokes, when arc lights failed to penetrate the thick air. The hacking cough sounded its hollow warning everywhere. A funeral cortège became lost and wandered aimlessly about for more than an hour. Wires and ropes were used to guide people home, so thick were the fumes.

As is often the case, it required something of an abstract

fluence there were innumerable attempts to duplicate the Deer Lodge greenery in Butte. These attempts, however, were for the most part fruitless and pitiful. One resident failing to make grass grow had his lawn covered with rocks and painted green.

Conditions drifted and smouldered along until about 1894, when a posse of irate fathers headed by the mayor of Butte raided and put out the burning "stink-piles." The "stink-

pile" owners claimed they were being discriminated against and threatened retaliation, but nothing of serious consequence occurred.

A big improvement came when Marcus Daly built his smelters twenty-three miles from Butte and started ore trains there. But that was much like robbing Peter to pay Paul as it shifted the evil to the rich Anaconda valley. As a result, law suits and counter law suits cluttered the dockets of Deer Lodge County, dragging the people into a titanic struggle that lasted for many years.

The telling of that struggle is another story. Suffice to say that out

of the turmoil came a consolidation of the smelter companies. A new plant was built at Anaconda, on the south side of the valley, and a tunnel one hundred and thirty-five feet wide and thirty feet high was built to the top of a nearby hill. Here a huge chimney, five hundred and eighty-seven feet high, was built and connected with the tunnel. This lifted the offending gases high above the valley floor.

But the lamentations of the farmers and ranchers continued. Finally, it was decided to attempt the extraction of solids from the smelter fumes, at least those of an injurious nature. As a result the Cottrell method of electrical precipitation of the dust-like particles was developed. The method was so successful that many of the Cottrell units were installed in the big tunnel.

The following years brought about better conditions in Butte, and 1913 found the city practically free from smelter fumes. Garden seeds were offered for sale, and garden-hungry people were seen hustling homeward with rakes, hoes, and kindred soil working implements. Carrots, onions, let-

tuce and radishes appeared in thin, straggly rows. Grass appeared, sometimes accompanied by ragged trees.

But patient nature sent rain that washed out the poisons and the sun revitalized the soil. Gradually the growing things assumed a healthier hue, not excepting the children. Perhaps that was partly due



And a street in Butte today! Not very old trees, but they do give promise of ample shade in a not distant future.

to cow's milk that soon became abundant when pastures returned to normalcy.

But there were residents of Butte who were not content with the mere growing of vegetables. The late J. R. Wharton, father of gardening in Butte, pioneered the way for the present galaxy of flowers, trees and driveways. A flower show was the first objective, and was successfully staged. Soon afterwards there was organized the Mountain Garden Club of Butte. Nine flower shows have been staged since its inception. Trees were also planted and today line almost every street, having made remarkable growth.

This is Butte today, which proves pretty well that there is always a sane way out of every difficulty if there is sufficient courage for the undertaking plus a love for nature's greenery.

## Fire-Weather Service

(Continued from page 514)

The truck used by the unit is specially prepared for the accommodation of an operating personnel of two men, one a meteorologist and the other a combined radio operator and observer. The equipment of the truck includes charting facilities and meteorological instruments necessary to measure local weather conditions at fires, in addition to the radio receivers.

The fire-weather unit has been in operation during the 1929 fire season only, as the first of two experimental years to determine its practicability under all sorts of field conditions. Insufficient field work has been done so far to war-

rant final conclusions. However, the feasibility of preparing detailed weather charts on going fires through the use of radio has been demonstrated, and there have been instances where the forecasts were of material assistance in suppression work.

Protection agencies throughout the country are becoming increasingly aware of the importance of fire-weather service, and the present and potential value of fire-weather service, and the gradual perfection of working tools and aids is being accomplished through the close cooperation of all agencies concerned.



*Little Stories by the Men of the Southern Forestry Educational Project of The American Forestry Association Who are Carrying the Message of Forest Protection to the People of the South*

**F**AR to the south of that section of Florida known as the place where "nature did its best," lies a land of swamps and open, sandy prairie. It seemed as though nature experimented here and then passed on, leaving a barren, unproductive wasteland. However, it might have been the plan of things that this country should remain the haunt of many creatures of the wild. The swamps and the matted jungles are the nesting places of the American and wood ibis, the snowy egrets, and the great herons and cranes, while the evil-looking water holds alligators and moccasins. The prairies served as the range for wild cattle and hogs.

It was into this section that I went one cloudless summer morning to arrange for a motion picture program and lecture. We were to show "Pardners," the motion picture made by the Southern Forestry Educational Project, and a number of other forestry educational and forest-fire prevention films. I learned later that this show marked the first motion picture the natives of this region had ever seen.

A little cluster of houses marked the town. There were no streets and the only thoroughfare was a sand-rutted road grown over with grass and palmetto. There was not even a schoolhouse. There was, however, a church and it was with the hope of using this for my motion-picture program that I approached the minister.

I found him nodding in a chair on the front porch of his home, and explained the purpose of my visit and the cause for which I was working. He listened patiently, gazing at a tall cypress that raised its boughs on the distant horizon.

"Well, young man," he finally said, "I don't reckon the church is a place to show movin' pictures."

I explained to him that we had shown in churches many times before and that the nature of our pictures was such that there need be no fear of anything out of place. Even this did not convince him.

"Movin' pictures is hardly a fit thing in the church," he said. "I have only seen one picture in my life and it was so full of vulgarity that I'll never go to another."

I assured him that we did not want to use the church if he felt that we shouldn't and invited him to see our picture.

Nearby I found a farmer splitting wood beside a cow barn. I made myself known and asked permission to hang a screen

on the side of his barn and show our pictures there. He very graciously gave permission.

So we gave the show in the farmer's barnyard to the music of bawling cattle, stomping horses and cackling chickens. Eighty or more people gathered, coming from miles around. When the show was over most everybody ex-

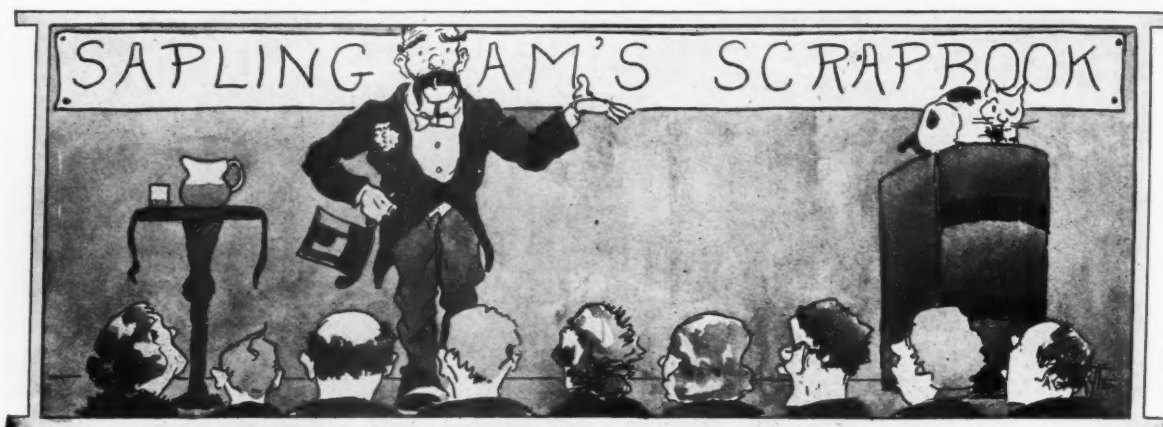


*A group of Florida school children ready to hear and see a program depicting the evils of woods-burning.*

pressed their appreciation. One man offered me a quarter, saying that he had enjoyed the program too much to accept it free.

It struck me after this incident that the Project is carrying on a worthwhile work when woods-burning people in the heart of a woods-burning country are willing to pay for information they get out of a program decrying the very things they have always thought necessary to their existence!—  
W. R. DUNLAP, *Unit Director, Florida.*





### Helpful Hints to Fire Fighters

When a power fire pump refuses to start at a crucial moment and all ordinary methods of making it run have failed, extraordinary methods must be used. The following helpful hints are the suggestions of several experienced pumpmen.

1. Crank the engine.
2. Remove spark plugs, empty carburetor, and crank the engine.
3. Sandpaper the flywheel, take off the timer and crank the engine.
4. Kick the intake hose, blow cigarette smoke in the priming cocks, and crank the engine.
5. Disconnect the water pump, reverse the gasoline tank, take off the grease cups, and crank the engine.
6. Repeat a verse from the Koran, stick a wet towel between the cylinders, take off the flywheel, and crank the engine.
7. Take the motor entirely apart, put it together with your fingers crossed, drop a quarter in the tank, and crank.
8. Crank the engine suddenly without doing anything else.
9. Turn your coat inside out, oil the hose connections, throw the batteries away, stuff a cushion in the flywheel and crank the engine.
10. Repeat the names of the Prophets in Arabic or Egyptian, put a gum-drop in No. 1 cylinder, write your candid opinion of gasoline engines on the "instruction" plate, roll up your sleeves, connect the magneto with your watch, take a pinch of snooze, remove your shoes, yell "Hell" into the gas tank, and crank the engine.—"Six Twenty Six."

### In Behalf of Boobies

Gene MacDonald says we ought to buy the Galapagos islands as a preserve for wild life. There are iguanas, frigate birds, dwarf penguins, the Galapagos albatross, and the green footed booby. Which raises a question: Does this country need

a special place for the protection of boobies. Good gracious, boobies just seem to thrive, whether you take care of 'em or not. Iguanas, frigate birds, dwarf penguins, and things like that have to be looked after; but, boobies; oh, as the late Mr. Barnum so quaintly said, there's one born every minute.—*Chicago Tribune*.

### Probably a Bit Rheumatic

"Sam Quay, of the geology department of the University of Texas, has found a fish near Dallas which authorities say is no less than 37,500,000 years old. The specimen, which is broken in only one place, will be put on display soon."

That's what I read in the paper yesterday. Now I ordered fish once in a restaurant down in Pensacola and—but wot's the use?

### Forests Products Note

"I'll be a millionaire in a week with my new invention."

"What's that?"

"Making wooden seeds for synthetic blackberry jam." — *Virginia Reel*.

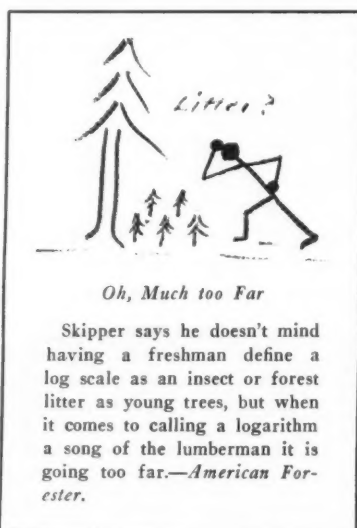
### Fervent Forestry

Thanks to Mrs. R. A. Ellis of Tampa, Florida, for this from Grosvenor Dawe in the *Lake Placid News*:

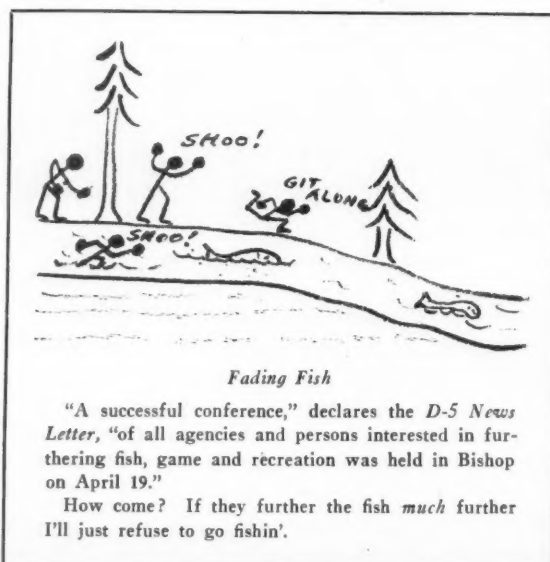
"For future fertility fight forest fires furiously. Forests, feathers, fins, furs, fraternal. For further facts frequent Florida's First Forest Fair—at Lake City, November."

### Research Note

"Not only has science discovered a fish that can walk overland from one body of water to another," observes Elmer C. Adams, in *The Detroit News*, "but a hunter who can shoot it for a deer on the way."



Skipper says he doesn't mind having a freshman define a log scale as an insect or forest litter as young trees, but when it comes to calling a logarithm a song of the lumberman it is going too far.—*American Forester*.



### Fading Fish

"A successful conference," declares the *D-5 News Letter*, "of all agencies and persons interested in furthering fish, game and recreation was held in Bishop on April 19."

How come? If they further the fish much further I'll just refuse to go fishin'.

# Chiggers—Pest of Man

By F. F. FRANKLIN

**C**HIGGERS, our pests of the blackberry patch, are also popularly called "harvest mites." Inhabitants of the South and southern portions of the Middle West, Central and Middle Atlantic States suggest that they need not be called. Just pay a visit, they say, during June, July, or August, to a blackberry patch, hay field, weed patch, grass or even low trees and the chigger audaciously pays his respects.

The severity of his attack usually depends upon the immunity of a person to his "bite." This immunity is built up through repeated infection which tends to inoculate or through various forms of work that harden and toughen the skin. Thus, a farmer who lives in an infested area will first suffer from chiggers but as the season grows on he will have built up an immunity or will have worked in the sun until his skin has turned brown, hard, and impervious to chigger bites. City residents usually suffer greatest, especially young women who spend considerable time in softening their skin and keeping away from the sun's rays. Children of the barefoot age are usually hard hit by the chigger but say less about it. They usually attack where clothing fits rather closely to the body. The ankles, knees and waist line generally get more than their share of this famous pest.

Just why the chigger burrows into the skin is not known. At least this habit is not normal, for soon afterward it dies. The burrowing into the skin is attained by following a pore or hair follicle down beneath the surface of the skin. As it proceeds with this excavation process it gorges with human blood and the red spot that we first note is really the chigger, or harvest mite, with some inflammation on the part of our own skin. This inflammation becomes very painful and our first attempt to correct the situation usually is done by scratching with the finger nails. This is an unwise habit for invariably severe scratching

will cause an abrasion through which serious infection may take place.

The chigger, as we know it, is in reality the true "mite" member of the order *Acarina* and family *Trombididae*. The word "chigger" probably is a corrupt form of "chigoe,"

which is the name of a sand flea found near the equator in South America, and which crawls under the nails of man and produces a painful skin abrasion similar to that of the chigger.

Chiggers are not true insects, but may be classified in a group with ticks and spiders. As mentioned, we are only well acquainted with the common mite form. This same mite or larva form is ovoid in outline, with three pairs of legs, each of which is tipped with prominent claws. The claws aid it in attaching to insects upon which it feeds. When "fed up" it drops off and hides in a protected, cool, and moist place where it remains motionless for several weeks. It then

gradually goes through a series of changes and emerges an eight-legged adult *Trombidium*, which is several times as large as the chigger, or mite stage.

This form is predaceous and wanders about feeding upon caterpillars and other larval forms. Very frequently we find adult *Trombidium*, in the late fall, upon the wings of common house flies. Some authorities maintain that the adult form lives upon snakes instead of the sluggish caterpillars and various larval forms. Late in the fall the adult hibernates in the soil and emerges again in the spring to lay several hundred eggs upon the ground. Only one brood a year has ever been noted. These eggs may be mistaken for fungous forms, but within a short time, providing the weather is favorable, they hatch and we have hundreds of the six legged mites or chiggers. In search of an insect host, it climbs onto various vegetable forms where it comes too frequently in contact with man. Adverse weather is the chigger's greatest natural enemy.



The "harvest mite" or "chigger," magnified 200 times. This is the little fellow that ruins our dispositions. This stage, or mite form, has but three pairs of legs.



The adult *Trombidium* does not molest man. This stage in its history hibernates over the winter months. It is here magnified twenty-five times. Note the four pairs of legs.

# The Conservation Calendar in Congress

The House adjourned on July 3 until December 1, 1930. The Senate will continue in special session to consider the London Naval Treaty. Accordingly, the Conservation Calendar will be omitted during the remainder of the summer and autumn.

## LAWS PASSED BY THE SEVENTY-FIRST CONGRESS

### APPROPRIATIONS

- H. R. 9979**—First deficiency appropriation bill for the fiscal years 1930 and 1931. Includes \$3,300,000 for fighting forest fires on National Forests during past fire season; \$180,000 to combat insect infestations on National Forests in Idaho, Montana, and Wyoming; \$45,000 for fighting forest fires on the Indian Forests during the past season; and other items for the several conservation bureaus. Public Law No. 78.
- H. R. 12902**—Second deficiency appropriation bill for the fiscal years 1930 and 1931. Includes \$3,500,000 for additional forest roads and trails as provided in Public Law No. 179, known as the Colton-Oddie law, and \$5,345.90 for the purchase of 763.7 acres of land in the Upper Mississippi Wild Life and Fish Refuge. Public Law No. 519.
- S. 3487**—Authorizing an appropriation of \$900,000 for construction of additional laboratories for use of the Forest Products Laboratory at Madison, Wisconsin. Incorporated in H. R. 7491. Public Law No. 128.
- H. R. 7491**—Department of Agriculture bill, carrying appropriations for 1931 of \$15,859,230 for the Forest Service, \$1,818,320 for the Biological Survey, and additional amounts for conservation activities in other bureaus. Public Law No. 272.
- H. R. 6564**—Department of the Interior appropriation bill carrying appropriations of \$9,989,135 for the National Park Service for 1931, and \$560,000 for the forests of the Indian Service. Public Law No. 217.

### FORESTRY

- S. 3817**—To simplify National Forest administration. Public Law No. 268.
- H. R. 10877**—Clarke-McNary—Authorizing annual appropriation for two succeeding fiscal years of \$3,000,000 for purchase of forest lands in Eastern States as authorized by the Weeks Law. Public Law No. 298.
- H. R. 4189**—To add certain lands to Boise National Forest. Public Law No. 491.
- H. R. 6130**—To exempt the Custer National Forest from the operation of the forest homestead law. Public Law No. 353.
- H. R. 10780**—To transfer certain lands to the Ouachita National Forest, Arkansas. Public Law No. 403.
- S. 3585**—To transfer certain lands from the Tusayan National Forest, Arizona, to the Western Navajo Indian Reservation. Public Law No. 250.
- H. R. 9412**—Leavitt—Authorizing the erection of a memorial archway to Theodore Roosevelt for his leadership for forest con-

servation, and marking the twenty-fifth anniversary of the Forest Service. Second deficiency appropriation bill includes \$25,000 for this. Public Law No. 296.

- H. J. Res. 195**—Authorizing the Inter-American Conference on Agriculture, Forestry and Animal Industry in Washington, September 8-20, 1930. \$25,600 carried in second deficiency appropriation bill. Public Resolution No. 63.
- H. R. 5616**—Colton-Oddie—To amend the public roads law of July 11, 1916, to authorize annual appropriations of \$125,000,000 for cooperation with the states in building public highways. Public Law No. 90.
- S. 4057**—Authorizing the Secretary of the Interior to extend the time for cutting and removing timber upon certain revested and reconveyed lands in the State of Oregon. Public Law No. 236.
- H. R. 3717**—To add certain lands to the Fremont National Forest in the State of Oregon. Public Law No. 214.
- H. R. 4810**—To add certain lands to the Helena National Forest in the State of Montana. Public Law No. 162.
- H. R. 10379**—Colton-Oddie—Authorizing appropriations of \$12,500,000 for forest roads and trails. Public Law No. 179.
- S. 669**—A bill referring to land grants to the Northern Pacific Railway Company which are embraced within the exterior boundaries of any National Forest or other government reservation. Public Law No. 22.
- S. 3531**—Knutson-Vandenberg—Authorizing tree-planting on National Forests, adequate care of timber sale areas on National Forests, and the furnishing of seedlings and young trees for replanting burned-over areas in any National Park. Public Law No. 319.
- S. 2498**—Shipstead-Newton-Nolan—To promote the better protection and highest public use of lands of the United States and adjacent lands and waters in northern Minnesota for the production of forest products, and for other purposes. Public Law No. 539.
- S. 846**—Conveying to Michigan for park purposes the Cheboygan Lighthouse Reservation, Michigan. Public Law No. 67.
- H. R. 12235**—Cramton—To provide for the creation of the Colonial National Monument in Virginia, and for other purposes. Public Law No. 510.
- H. R. 5672**—Abolishing the Papago Saguaro

National Monument in Arizona and disposing of the lands for park and recreational uses. Public Law No. 92.

- H. R. 10581**—For addition of lands to the Yosemite National Park, California. Public Law No. 187.
- H. R. 6121**—To authorize the maintenance of central warehouses in National Parks and National Monuments and authorizing appropriations for the purchase of supplies and materials to be kept in said warehouses. Public Law No. 145.
- S. 9895**—Establishing the Carlsbad Caverns National Park in the State of New Mexico. Public Law No. 216.
- S. 4169**—Adding certain lands to Zion National Park, Utah. Public Law No. 351.
- H. R. 3568**—Revising boundaries of Yellowstone National Park. Public Law No. 147.
- H. R. 6343**—Extending the boundary limits of the proposed Great Smoky Mountains National Park. Public Law No. 154.
- H. R. 5619**—Authorizing land exchanges within the Lassen Volcanic National Park for private lands adjoining the park. Public Law No. 148.
- H. R. 8763**—Authorizing the Secretary of the Interior to investigate and report to Congress on the advisability of establishing the Apostle Islands National Park in Wisconsin. Public Law No. 186.
- H. R. 9183**—To provide for the exercise of sole and exclusive jurisdiction by the United States over the Hawaii National Park in the Territory of Hawaii and for other purposes. Public Law No. 156.
- H. R. 6874**—Authorizing exchanges of lands with owners of private land holdings within the Petrified Forest National Monument. Public Law No. 215.
- H. R. 10582**—Adding certain lands to the Lassen Volcanic National Park, California. Public Law No. 507.
- S. 195**—To facilitate the administration of the National Parks. Public Law No. 255.
- S. 4170**—Adding certain lands to the Bryce Canyon National Park, Utah. Public Law No. 352.
- H. R. 2824**—Amending Section 5 of act establishing a National Military Park at Fort Donelson, Tennessee. Public Law No. 49.
- S. J. Res. 155**—Naming a prominent mountain peak within the Mount McKinley National Park, Alaska, in honor of Carl Ben Eielson. Public Resolution No. 87.
- H. R. 11784**—Adding certain lands to the Rocky Mountain National Park, Colorado. Public Law No. 404.

### PARKS



H. R. 4020—Authorizing the Secretary of the Interior to investigate and report to Congress on the advisability of establishing a National Park to be known as the Upper Mississippi National Park in the State of Iowa. Public Law No. 358.

#### WILD LIFE

S. 941—Hawes—To amend the act entitled "An act to regulate interstate transportation of black bass, and for other purposes," approved May 20, 1926. Public Law No. 495.

H. R. 5191—Authorizing the State of Nebraska to make additional use of Niobrara Island as a game and fish preserve. Public Law No. 44.

H. J. Res. 278—Authorizing an appropriation of \$30,000 for participation by the United States in the International Fur-Trade Exhibition and Congress to be held in Leipzig, Germany, in 1930. Public Resolution No. 59.

H. R. 7405—White—Providing a five-year construction and maintenance program for the United States Bureau of Fisheries. Public Law No. 240.

S. 3950—Establishing a migratory bird refuge in the Cheyenne Bottoms, Barton County, Kansas. Public Law No. 346.

S. 1959—Creating a game sanctuary within the Ocala National Forest, Florida. Public Law No. 466.

S. Res. 246—Creating a committee of five Senators to investigate matters pertaining to the replacement and conservation of wild-animal life, and to make recommendations for necessary legislation.

#### MISCELLANEOUS

H. R. 6153—Authorizing the appointment by the President of a Public Domain Commission. Public Law No. 107.

S. Res. 222—Resolved, That the manuscript entitled "The Control, Conservation, and Utilization of the Flood Waters of the Mississippi Basin," prepared for the National Flood Commission by the Research Service, Inc., of Washington, District of Columbia, be printed as a Senate document. Senate Document No. 127.

H. R. 156—Authorizing the disposal of public land classified as temporarily or permanently unproductive on Federal irrigation projects. Public Law No. 232.

H. R. 1—Establishing a Federal Farm Board. Public Law No. 10.

H. R. 2152—Expanding in the foreign field service now rendered by the United States

Department of Agriculture in acquiring and diffusing useful information regarding agriculture. Public Law No. 304.

S. 3619—Couzens—Reorganizing the Federal Power Commission. Public Law No. 412.

H. R. 26—Cramton—For the development of the George Washington Memorial Parkway from Mt. Vernon to the Great Falls of the Potomac, and for the extension of the park and playground system of the National Capital. Public Law No. 284.

H. R. 8479—To amend the act entitled "An act for the control of floods on the Mississippi River and its tributaries, and for other purposes." Approved May 15, 1928. Public Law No. 395.

S. Res. 212—Authorizing the Secretary of the Interior and the Secretary of Commerce to assemble all the data that they may have in regard to the wood-pulp, supply, power sites, transportation, and other matters entering into the possible projection of the newsprint industry into Alaska, and report their findings and the data to the Senate at the earliest possible moment. Considered and agreed to on February 15, 1930.

S. 4015—The Plant Patent Law. Public Law No. 245.

H. R. 2667—1930 Tariff Bill—Public Law No. 361.

### Bills Pending in Congress

These bills will hold their places on the Congressional Calendar and may be considered during the short session of the Seventy-First Congress, beginning December 1, 1930

#### APPROPRIATIONS

S. 4586—McNary—To authorize additional appropriations for the National Arboretum. Reported to Senate June 26. Passed the Senate June 27.

#### CONSERVATION

S. 940—Hawes—To create an executive department of the Government to be known as the Department of Conservation. Referred to the Committee on Interstate Commerce May 3, 1929.

S. J. 101—King—Authorizing the President to invite the states to participate in a conference for the purpose of formulating a comprehensive plan for forest conservation and reforestation. Referred to Committee on Agriculture and Forestry on December 4, 1929.

S. 1594—King—To establish a branch of the Department of the Interior in one of the Public Land states, to transfer to such branch certain bureaus and offices of the Department of the Interior, and for other purposes. Referred to the Committee on Public Lands and Survey September 5, 1929.

#### EDUCATION

S. Con. Res. 23—Wagner—To provide for the establishment of an American Con-

servation Week. Reported favorably by Senate Committee on Public Lands and Surveys. Report No. 862. Passed the Senate June 6. Referred to Judiciary Committee of the House June 13.

S. 2246—McNary—To amend the act entitled "An act to provide for the protection of forest lands, for the reforestation of denuded areas, for the extension of National Forests, and for other purposes, in order to promote the continuous production of timber on lands chiefly suitable therefore." Approved June 7, 1924, as amended. This bill would provide Sec. 5-A, authorizing \$100,000 to permit cooperation with State Foresters for the purpose of assisting forest industries and timberland owners. Referred to Committee on Agriculture and Forestry December 3, 1929.

#### GRAZING

S. 1190—Phipps—To promote the development, protection and utilization of grazing facilities within National Forests, and for other purposes. Referred to Committee on Agriculture and Forestry May 20, 1929.

S. 62—Smoot—To promote the development, protection and utilization of National Forest resources, to stabilize the livestock industry, and for other purposes. Referred

to Committee on Public Lands and Surveys April 18, 1929.

#### INDIAN FORESTS

S. 2489—Frazier—To provide for the establishment of the Colville Indian Forest. Referred to Committee on Indian Affairs, December 4, 1929.

H. R. 6865—Leavitt—Bill similar to above. No action taken.

S. 2490—Frazier—To provide for the establishment of the Klamath Indian Forest. Referred to Committee on Indian Affairs December 4, 1929.

H. R. 6863—Leavitt—Bill similar to above. No action taken.

S. 2231—Hayden—To reserve certain lands on the Public Domain in Arizona for the use and benefit of the Papago Indians, and for other purposes. Reported with amendments on May 22. Report No. 702. Passed the Senate May 23. Reported to the House June 16.

S. 2488—Frazier—To provide for the establishment of the Warm Springs Indian Forest. Referred to Committee on Indian Affairs December 4, 1930.

H. R. 6864—Leavitt—Bill similar to above. No action taken.

S. 3166—Frazier—To provide for the establishment of the Yakima Indian Forest. Referred to the Committee on Indian Affairs January 6.

H. R. 8529—Leavitt—Bill similar to above. Reported to the House May 21. Report No. 1574. Passed the House June 23.

#### LANDS

S. 3557—McNary—To provide for the acquisition of certain timberlands and the sale thereof to the State of Oregon for recreational and scenic purposes. Reported to the Senate June 5. Report No. 832. Passed the Senate June 11. Reported to the House June 18.

S. 1593—King—Granting certain unreserved and unappropriated Public Land to the several states. Referred to the Committee on Public Lands and Surveys September 5, 1929.

S. 3146—McNary—To aid in establishment of State Parks. Referred to Committee on Public Lands and Surveys January 6.

H. R. 9051—Englebright—Bill similar to above. No action taken.

#### MISCELLANEOUS

S. 2354—George—To amend the Agricultural Marketing Act so as to include naval stores. Reported to the Senate, amended, February 28. Report No. 230. Passed the Senate April 14.

H. R. 194—Dickinson—To provide for research work in connection with the utilization of agricultural products other than forest products, and for other purposes. Referred to the Committee on Agriculture April 15, 1929.

H. R. 11701—Garber—To promote the maintenance and stabilization of the channels of navigable streams of the United States and to promote commerce between the several states, to protect post roads, to protect the Federal highways for military purposes, and for other purposes. Referred to Committee on Rivers and Harbors April 16.

S. 2327—Steiner—Authorizing the Secretary of the Interior to convey certain lands to the county of Douglas, Oregon, for park purposes. Reported to Senate January 21.

S. 1203—Bill similar to above. Reported to Senate January 21. Report No. 131. Passed the Senate April 1. Reported to the House April 25. Report No. 1318.

H. R. 11968—Swing—To reserve for public use scenic rocks, pinnacles, reefs, and small islands along the sea coast of Orange County, California. Referred to the Committee on Public Lands April 28.

H. R. 12308—Wood—To provide for the construction of a mill to manufacture distinctive paper for United States securities. Referred to the Committee on Expenditures in the Executive Departments May 12.

H. R. 2527—Goodwin—Authorizing an appropriation to encourage the utilization of farm waste for the production of paper by aiding farmers and local chambers of commerce to develop the manufacturing of paper pulp from waste crops. Referred to Committee on Agriculture May 3, 1929.

S. 561—Schall—Bill similar to above. No action taken.

#### NATIONAL FORESTS

H. R. 10782—Haugen—To facilitate and simplify the work of the Forest Service. Reported to the House April 29. Report No. 1338. Passed the House June 24. Reported to Senate July 1. Report No. 1142.

S. 4149—Kendrick—To add certain lands to the Ashley National Forest in the State of Wyoming. Reported to the Senate on June 24. Report No. 1088. Passed the Senate June 25, 1930.

H. R. 11550—Carter—Bill similar to above. No action taken.

H. R. 7992—To add certain lands to the Cochetopa National Forest in the State of Colorado. Referred to Committee on Public Lands January 6.

S. 1695—Hayden—Providing for the acquirement by the United States of privately owned lands situated within the Coconino or Sitgreaves National Forests, Arizona, by exchanging therefor lands on the Public Domain within said state. Referred to Committee on Public Lands and Surveys September 9, 1929.

H. R. 990—Hawley—To add certain lands to the Crater Lake National Forest. Referred to Committee on Public Lands April 17, 1929.

S. 2056—McNary—Bill similar to above. No action taken.

H. R. 3204—Colton—To authorize the exchange of certain privately owned lands located within the Dixie National Forest, Utah, for Public Lands within said state. Referred to the Committee on Public Lands, May 21, 1929.

S. 3594—McNary—Authorizing appropriations for the construction and maintenance of improvements necessary for protection of the National Forests from fire, and for other purposes. Reported to Senate May 27. Report No. 731. Passed Senate June 2.

H. R. 3245—Englebright—Bill similar to above. Hearings before House Committee on Agriculture and Forestry, March 10, 12 and 13; published, April 4.

H. R. 9630—Hawley—To make the regulations of the Secretary of Agriculture relating to fire trespass on the National Forests applicable to lands, the title to which is vested in the United States by the act approved June 9, 1916 (Thirty-ninth Statutes, page 218), and to certain other lands known as the Coos Bay Wagon Road lands. Reported to the House on April 2. Report No. 1055.

S. 2367—McNary—Bill similar to above. No action taken.

H. R. 9685—Taylor—To add certain lands to the Gunnison National Forest, Colorado. Referred to the Committee on Public Lands February 8.

H. R. 5653—French—For the inclusion of certain lands in the National Forests in the State of Idaho. Referred to the Committee on Public Lands December 2, 1929.

S. 116—Borah—Bill similar to above. No action taken.

S. 3130—Oddie—To enable the Secretary of Agriculture to control emergency insect infestations on the National Forests. Referred to the Committee on Agriculture and Forestry January 6, 1930.

H. R. 8804—Englebright—Bill similar to above. No action taken.

H. R. 208—Taylor—To add certain public lands to the Leadville National Forest, Colorado. Referred to the Committee on Public Lands April 15, 1929.

S. 462—Pittman—To include certain lands in the counties of Lincoln, Nye and White Pine, Nevada, in the Nevada National Forest, Nevada, and for other purposes. Referred to the Committee on Public Lands and Surveys April 23, 1929.

H. R. 10368—Arentz—Bill similar to above. No action taken.

H. R. 7993—Taylor—To add certain lands to the Pike National Forest, Colorado. Referred to the Committee on Public Lands January 6, 1930.

S. 2366—McNary—To increase the proportion of the annual receipts from National Forests to be paid to the states for the benefit of the public schools and public roads. Referred to the Committee on Agriculture and Forestry December 4, 1929.

S. 4166—McNary—To facilitate the use and occupancy of National Forest lands for purposes of residence, recreation, education, industry and commerce. Referred to the Committee on Agriculture and Forestry April 14, 1930.

H. R. 11637—Haugen—Bill similar to above. No action taken.

H. R. 5404—Hawley—Authorizing the exchange of land adjacent to the Santiam National Forest in the State of Oregon. Reported to the House May 5, 1930. Report No. 1379.

H. R. 4951—Hawley—Authorizing adjustment of the boundaries of the Santiam National Forest, State of Oregon, and for other purposes. Referred to Committee on the Public Lands November 7, 1929.

H. R. 10962—Hawley—Authorizing adjustment of the boundaries of the Siuslaw National Forest, in the State of Oregon, and for other purposes. Referred to Committee on the Public Lands March 20, 1930.

S. 3774—Norbeck—To amend the United States mining laws applicable to the National Forests within the State of South Dakota. Reported to the Senate April 8. Passed the Senate April 14.

S. 1718—Jones—To authorize addition of certain land to the Wenatchee National Forest. Referred to Committee on Agriculture and Forestry September 9, 1929.

H. R. 12801—Butler—To extend the provisions of the Forest Exchange Act to public lands within ten miles of the boundaries of the Whitman National Forest in the State of Oregon. Reported to the House June 18. Report No. 1962.

S. 2351—Thomas—Providing for the enlargement of the Wichita National Forest and

Game Preserve located in the State of Oklahoma, by the purchasing and adding thereto of adjacent land, and authorizing an appropriation therefor. Referred to Committee on Agriculture and Forestry December 3, 1929.

H. R. 13052—Pittenger—To amend section 7 of the act entitled "An act to enable any state to cooperate with any other state or states, or with the United States, for the protection of the watersheds of navigable streams, and to appoint a commission for the acquisition of lands for the purpose of conserving the navigability of navigable waters," approved March 1, 1911, as amended. Referred to the Committee on Agriculture June 19.

### NATIONAL PARKS

H. R. 8163—Colton—To facilitate the administration of the National Parks by the United States Department of the Interior, and for other purposes. Reported to the House March 20.

S. 196—Nye—Bill similar to above. Reported to the Senate April 28. Report No. 545. Passed the Senate May 7.

H. R. 12404—Leavitt—To amend the act of April 9, 1924, so as to provide for National Park approaches. Reported to the Senate June 21. Report No. 1999.

S. 3073—Nye—Bill similar to above. No action taken.

H. R. 12381—Owen—To provide for the establishment of the Everglades National Park in the State of Florida, and for other purposes. Referred to the Committee on Public Lands May 14.

H. R. 10584—To authorize the Secretary of the Interior to restore natural landscape conditions in Glacier National Park, Montana. Referred to the Committee on Public Lands March 7, 1930.

S. 2318—Jones—To establish the Grand Coulee National Park in the State of Washington. Referred to Committee on Public Lands and Surveys December 3, 1929.

H. R. 13249—Glover—To authorize the acceptance of a tract of land adjoining Hot Springs National Park, Arkansas, and for other purposes. Referred to the Committee on Public Lands June 30, 1930.

H. R. 239—Sinclair—To establish the Killdeer Mountain National Park in the State of North Dakota, and for other purposes. Referred to Committee on Public Lands April 15, 1929.

H. R. 11900—To authorize the Secretary of the Interior to investigate and report to Congress on the desirability of the acquisition of a portion of the Menominee Indian Reservation in Wisconsin for establishment of a National Park. Passed House June 9.

H. R. 3867—Wingo—To establish the Ouachita National Park in the State of Arkansas. Referred to the Committee on Public Lands June 11, 1929.

H. R. 8284—Cramton—To abolish the Platt National Park in the State of Oklahoma and to provide for the disposition of the lands therein to the State of Oklahoma for use as a State Park, and for other purposes. Referred to the Committee on the Public Lands January 8, 1930.

H. R. 8283—Cramton—To change the name of the Platt National Park, in the State of Oklahoma, to the Platt National Monument, and for other purposes. Referred to the Committee on the Public Lands January 8, 1930.

H. R. 235—Sinclair—To establish the Roosevelt National Park in North Dakota. Referred to the Committee on Public Lands April 15, 1929.

S. 326—Waterman—To establish a National Park to be known as the Royal Gorge National Park, and for other purposes. Referred to the Committee on Public Lands and Surveys April 22, 1929.

H. R. 2374—Crail—To add certain lands to the Sequoia National Park, California. Referred to the Committee on Public Lands May 1, 1929.

H. R. 8534—Hall—For the transfer of jurisdiction over Sullys Hill National Park from the Department of the Interior to the Department of Agriculture, to be maintained as the Sullys Hill National Game Preserve, and for other purposes. Reported to the House, with amendments, June 23, 1930. Report No. 2014.

H. R. 13190—Garber—To establish the Wichita Mountains National Park of Oklahoma in the State of Oklahoma. Referred to the Committee on the Public Lands June 27, 1930.

### REFORESTATION

H. R. 3569—Fulmer—To divert lands unsuited for profitable agriculture to productive forestry uses. Referred to the Committee on Agriculture, May 31, 1929.

S. 122—Oddie—To amend an act entitled "An act to provide for the protection of forest lands, for the reforestation of denuded areas, for the extension of National Forests and for other purposes, in order to promote the continuous production of timber on lands chiefly suitable therefor." Amends Section 4 to permit federal cooperation with states in growing trees and shrubs for watershed planting as well as for planting lands on farms. Referred to Committee on Agriculture and Forestry April 18, 1929.

S. J. Res. 116—McNary—Extending the provisions of sections 1, 2, 6, and 7 of the act of Congress entitled "An act to provide for the protection of forest lands, for the reforestation of denuded areas, for the

extension of National Forests, and for other purposes, in order to promote the continuous production of timber on lands chiefly suitable therefor" to the Territory of Porto Rico. Referred to the Committee on Agriculture and Forestry January 6, 1930.

H. J. Res. 192—Davila—Similar to above bill. No action taken.

H. R. 6976—Fulmer—To establish, maintain, and operate a reforestation station for pine and other timber trees in the seventh congressional district of South Carolina. Referred to the Committee on Agriculture December 9, 1929.

H. R. 11785—Swing—To conserve the water resources and to encourage reforestation on the watersheds of San Bernardino and Riverside Counties, California, by the withdrawal of the public lands within the San Bernardino National Forest from location and entry under the mining laws. Referred to the Committee on Public Lands April 21, 1930.

H. R. 11976—Swing—Bill similar to above. Referred to the Committee on Public Lands April 28, 1930. No action taken.

S. J. Res. 183—H. J. Res. 284—Authorizing the Secretary of Agriculture to cooperate with the territories of the United States under the provisions of sections 1 and 2 of the act of Congress entitled "An act to provide for the protection of forest lands, for the reforestation of denuded areas, and for other purposes, in order to promote the continuous production of timber on lands chiefly suitable therefor." Reported to the Senate on July 1, 1930. Report No. 1143. —H. J. Res. 284. Referred to the Committee on Agriculture, March 31, 1930.

### ROADS

H. R. 7585—Colton—To amend the act entitled "An act to provide that the United States shall aid the states in the construction of rural post roads, and for other purposes," approved July 11, 1916, as amended and supplemented, and for other purposes. Reported to the House on January 29. Report No. 555. Recommended to Roads on March 17.

H. R. 9304—Colton—Bill similar to above. Referred to the Committee on Roads January 29, 1930.

S. 1486—Oddie—Bill similar to H. R. 7585. Referred to House Committee on Post Offices and Post Roads June 14, 1929.

### TAXATION

S. 2801—Steiwier—Authorizing and directing the Secretary of Agriculture to investigate all phases of taxation in relation to Agri-



culture. Referred to Committee on Agriculture and Forestry December 13, 1929.

H. R. 2570—Brand—To aid in the reduction of taxes on farm lands and to promote elementary education in rural areas of the United States and to cooperate with the states in the promotion of the objectives. Referred to the Committee on Education May 6, 1929.

S. 370—Caraway—To authorize the payment of fifty per cent of the proceeds arising from the sale of timber from the National Forest reserves in the State of Arkansas to the promotion of agriculture, domestic economy, animal husbandry, and dairying within the State of Arkansas, and for other purposes. Referred to the Committee on Public Lands and Surveys April 22, 1929.

#### WATER AND STREAM CONTROL

H. R. 9376—Sears—Providing for the creation of a Federal Board of Public Works, etc. Referred to Committee on Flood Control January 31, 1930.

H. R. 1811—Rainey—Providing for the development and control of waterways and water resources. Referred to the Committee on Flood Control April 23, 1929.

H. R. 9326—Knutson—To amend the act entitled "An act to carry into effect provisions of the Convention between the United States and Great Britain to regulate the level of the Lake on the Woods concluded on the 24th day of February, 1925." Approved May 22, 1926, as amended. Reported to the House on June 21. Report No. 2003.

S. 4730—Shipstead—Bill similar to above. No action taken.

H. R. 11723—Stone—To establish a Federal Flood Control Board. Referred to the Committee on Flood Control April 17, 1930.

H. R. 1579—Sinclair—To establish a Mississippi River Board of Engineers. Referred to the Committee on Flood Control April 19, 1929.

H. R. 9335—Buchanan—To establish in the Department of the Interior a National Reclamation Control Service, to provide aid to the states and their political subdivisions in the construction of improvements for the purpose of flood prevention, drainage, and irrigation, and for other purposes. Referred to Committee on Flood Control January 30, 1930.

S. 3390—Connally—Bill similar to above. No action taken.

H. R. 10625—Hudson—To amend the act entitled "An act to protect navigation from obstruction and injury by preventing the discharge of oil into the coastal navigable waters of the United States." Approved June 7, 1924. Referred to Committee on Rivers and Harbors March 10, 1930.

S. 4373—Ransdell—Bill similar to above. No action taken.

H. R. 4854—Smith—For the protection of the water flow of streams in the Public Land states. Referred to Committee on the Public Lands October 31, 1929.

S. 484—Norbeck—To provide for the protection of watersheds within the National Forests which are the source of municipal water supply. Referred to the Committee on Agriculture and Forestry.

H. J. Res. 126—French—To authorize the President to withdraw from operation of land laws and from grazing, except under special permit, all areas within watersheds of reclamation projects. Referred to Committee on Public Lands November 4, 1929.

H. R. 4187—French—To prevent erosion of soil, to protect the national watersheds, and to promote the highest general uses of the Public Domain, and for other purposes. Referred to Committee on Public Lands September 23, 1929.

H. R. 9722—Temple—To provide for the topographic mapping and the measurement of river discharge of the alluvial valley of the lower Mississippi River and such other areas as have an immediate bearing on the solution of flood problems of the Mississippi River Basin. Referred to the Committee on Flood Control February 10, 1930.

H. R. 11512—Griffin—Amending the River and Harbor Act, approved March 3, 1899, for the protection and preservation of the navigable waters of the United States. Referred to the Committee on Rivers and Harbors April 9, 1930.

H. R. 9848—O'Connor—To create a Waterways and Water Resources Commission. Referred to the Committee on Interstate and Foreign Commerce February 13, 1930.

#### WILD LIFE AND FISHERIES

H. R. 9726—Sutherland—To amend the Alaska game law. Referred to the Committee on Agriculture February 10, 1930.

H. R. 11285—Sutherland—Bill similar to above. Reported to the House on April 21, 1930. Report No. 1242.

S. 4379—Bill similar to above. No action taken.

H. R. 9725—Sutherland—To amend the Alaska game law by more adequately defining the powers of United States commissioners within the Territory in the enforcement of said act, and for other purposes. Referred to the Committee on the Judiciary February 10, 1930.

S. 1551—Norbeck—To authorize the Secretary of Agriculture to acquire a herd of musk oxen for introduction into Alaska for experimentation with a view to their domestication and utilization in the Territory. Referred to the Committee on Agriculture June 17, 1929.

H. R. 243—Sutherland—Bill similar to above. No action taken.

S. 2908—Norbeck—Extending protection to the American eagle. Reported to the Senate February 12, 1930. Report No. 180. Passed the Senate April 7, 1930.

H. R. 7994—Andresen—Bill similar to above. Hearings held on this bill January 31. The hearings have been published. No further action taken.

H. R. 9599—Leavitt—To authorize the Secretary of Agriculture to carry out his ten-year cooperative program for the eradication, suppression, or bringing under control of predatory and other wild animals injurious to agriculture, horticulture, forestry, animal husbandry, wild game, and other interests, and for the suppression of rabies and tularemia in predatory or other wild animals, and for other purposes. Referred to Committee on Agriculture February 6, 1930.

S. 3483—Norbeck—Bill similar to above. No action taken.

S. 3091—Phipps—To establish a game refuge within the State of Colorado. Referred to the Committee on Public Lands and Surveys January 6, 1930.

S. 681—Robinson—To establish game sanctuaries in the National Forests. Referred to the Committee on Agriculture and Forestry April 29, 1929.

H. R. 5278—Haugen—To amend the Migratory Bird Treaty Act with respect to bag limits and more effectively to meet the obligations of the United States under the Migratory Bird Treaty. Hearings held before House Committee January 27-29, 1930, and published.

H. R. 11583—Simmons—For the acquisition of private lands within the exterior boundaries of the Niobrara Reservation. Referred to the Committee on Agriculture April 11, 1930.

H. R. 12991—Glover—To authorize the creation of game refuges on the Ouachita National Forest in the State of Arkansas. Referred to the Committee on Agriculture June 16, 1930.

S. 4134—McNary—To provide for the enforcement of the "Act for the preservation of American Antiquities" of June 8, 1906, as amended, and the "Lacey Act" of May 25, 1900, as amended regulating interstate or foreign commerce in wild animals and birds, or parts thereof, and for the protection of employees of the Department of Agriculture in the performance of their duties, and for other purposes. Referred to the Committee on Agriculture and Forestry April 10, 1930.

H. R. 219—Fulmer—Authorizing the establishment of the South Carolina Migratory Bird Refuge. Referred to Committee on Agriculture April 15, 1929.

S. 2350—Thomas—Providing for the improvement and extension of the game breeding and refuge areas in the Wichita National Forest and Game Preserve in the State of Oklahoma and authorizing appropriations therefor. Referred to the Committee on Agriculture and Forestry December 3, 1929.

H. R. 10422—Colton—To authorize the Secretary of the Interior to make exchanges of certain lands in connection with the creation of wild-life reservations to be administered by the Department of Agriculture, and for other purposes. Referred to the Committee of Agriculture March 1, 1930.

# Sound, Steady Development

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## With The American Forestry Association

### Law Creates New Power Commission

Legislation reorganizing the Federal Power Commission was signed by President Hoover on June 23. This is the result of the Couzens bill, S. 3619, and will replace the present commission of three cabinet officers with a group of five commissioners to serve for terms of five years each, who will devote their entire time and attention to administering the federal water power act. In an oral statement to the press, the President expressed his intention to reorganize the commission completely at an early date. The five commissioners will be appointed by the President and will receive a salary of \$10,000 each. The new act takes effect when three of the five commissioners take office, one of whom will be appointed chairman.

The present Commission is comprised of the Secretaries of Agriculture, the Interior and War, with an executive secretary appointed to handle the details of the work.

### Largest State Park

South Dakota claims Custer State Park, comprising approximately 135,000 acres in the Black Hills of Custer County, to be the largest State Park in the nation.

Within a tight fence the state maintains about 3,500 elk, 2,000 deer, 175 buffalo and numerous smaller animals. The park joins Wind Cave National Park on the south, and more than 100 miles of highway make the principal points accessible. Within the park is the State Game Lodge where President Coolidge made his summer home in 1927.

### New York Leads in Reforestation

New York leads among the states engaged in reforestation projects, having planted more than one-third of all the trees planted and nearly three times as many as any other state. Distribution estimates for 1929 show that thirty-six states and two

The five New England states, which participated in the reforesting movement, Maine, New Hampshire, Vermont, Massachusetts and Connecticut, planted a total of 7,932,776. It is claimed that the increase in planting shown by New York state was largely the result of state and county activities under the new Howitt reforestation laws, under which several state reforestation areas were planted and a number of county forests established.

### Smoking Restricted on the Western Forests

Smoking is being either banned entirely or strictly regulated in National Forests on the west coast. Increasing fire hazard, due to hot weather and lack of rain, has resulted in the closing to smoking of thirteen National Forests in California and the enforcement of no smoking while traveling in National Forests of the Pacific Northwest.

In order not to work hardship on those who enjoy smoking, the California foresters have set aside certain places which will be posted with signs "Smoke Here." The regional forester of the Pacific Northwest, C. J. Buck, says: "It is not our desire to interfere unduly with the enjoyment of our forest visitors. At the same time, we must recognize that our first duty is the protection of the forested areas entrusted to our care. Therefore, instead of prohibiting smoking altogether, we are making the very reasonable requirement that the smoker shall stop while smoking."

The closing orders are based on the smoker's code advocated by the Forest Service and co-operating agencies.

### Congressional Flood Control Committee to Visit Louisiana

The House Committee on Flood Control has accepted an invitation from Governor Huey Long to visit Louisiana in August to consider matters in relation to the Jadwin Flood Control Plan. During June the committee heard engineers from eight Mississippi valley railroads who stated that the completion of the Jadwin plan for flood control on the Mississippi will cost their lines more than \$86,000,000. These engineers told the committee that the expenditures would be necessitated in connection with the Boeuf, Bonnet Carré and Atchafalaya spillways. They declared that the Government should assume these costs. The committee, whose chairman is Representative Frank R. Reid, of Illinois, will be accompanied by the Chief of Army Engineers, Major-General Lytle Brown.

territories, Porto Rico and Hawaii, distributed for forest planting 67,722,000 trees. New York state planted of this number 25,367,700; Michigan, 10,866,800; Pennsylvania, 9,289,900; Ohio, 3,257,125, and Massachusetts, 3,012,500. No other one state planted as many as three million trees.



(Ninth of a series of practical forestry discussions)

## Stabilization of Production Essential to Forestry Progress



Over-production means incomplete utilization

**S**OLUTION of our forest problem, leading to a nation-wide system of practical forest conservation which will supply the present and future forest requirements of the country, involves the elimination step by step of a series of economic obstacles.

Commercial forestry—the business of growing successive crops of timber—must have profitable timber values, which in turn are dependent upon active and sustained demand from prosperous forest and wood-using industries.

The forest industries in recent years have not been prosperous. An almost chronic condition of over-production has literally wiped out manufacturing profits, thereby contributing to wasteful utilization and premature cutting of timber needed as a reserve for the future.

The consequent depression of prices of lumber and other forest products discourages the practice of commercial forestry and tends to drive forest lands from the tax rolls, to the detriment of local and national prosperity. The situation makes for insecurity of employment among those dependent for their livelihood upon the forest industries.

Of the whole forest problem, over-production stands out as that phase most pressingly in need of immediate solution. The restoration and maintenance of a proper balance between production and consumption of forest products is as vital to the public welfare as to the industries themselves.

The National Lumber Manufacturers Association has frankly faced the problem of over-production and has a clear-cut plan for its solution. In a word, it is conscious adjustment of production to probable demand, as ascertained by comprehensive trade statistics recording current consumption and forecasting requirements. Its success depends mainly upon public understanding. This will largely be determined by thoughtful forest-minded people like the readers of *AMERICAN FORESTS* and *FOREST LIFE*.

### Forestry Program of the National Lumber Manufacturers Association Summarized

1. Intensive campaign to encourage every commercial forest owner to study carefully the economic timber-growing possibilities of his properties.
2. Encouragement to forest owners to study the economic advantages of selective logging and sustained yield methods and to apply them wherever practicable.
3. Expert advice to individual forest-land owners and to regional lumber manufacturers' associations to stimulate and direct forest economic studies of individual forest-land properties.
4. Acceleration of cooperative activities under the Clark-McNary and McSweeney-McNary Federal acts to eliminate methods of oppressive taxation, to extend effective protection against fires, to improve standards of wood utilization and to advance sound economic practice in forest conservation and replacement.
5. Development of plans for stabilization of the lumber industry and the orderly control of production.
6. Coordination of sales of Federal and State Forest timber with the activities of owners of adjacent private forest property.
7. Larger appropriations for the protection of National Forests.
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9. Permanent reproductive administration of the Indian Reservation forests.
10. Education of the public to a more intelligent utilization of lumber and other forest products, and encouragement of public and private research in the utilization of logging and sawmill by-products and diversification of wood uses.

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### Iowa Girls and Boys Engage in Forestry Project

Forestry and tree planting were the basis of a program for a two days' institute for the boys and girls of Emmet County at Estherville this spring. Speakers on the program included Professor I. T. Bode, extension forester at Ames; Professor N. Davis, landscape architect, and W. E. Drips, associate editor of *Wallaces' Farmer*. In addition, the program included demonstration roadside plantings in several of the townships of Emmet County, in which were included more than 100 black walnut trees grown by Boy Scouts and secured through the efforts of the National Nut Tree Planting Project of The American Forestry Association.

### Maple Products Show Increase in 1930 Pennsylvania Season

Pennsylvania produced twice as much maple sugar and nearly three times as much syrup during the season of 1930, as compared with that of 1929, reports the Pennsylvania Department of Agriculture. The season opened in January and continued for an average of 4.7 week, making it one of the best in a decade. The report stated that the 565,000 trees tapped in Pennsylvania produced 87,000 pounds of sugar and 224,000 gallons of syrup. In terms of sugar this year's crop of 1,879,000 pounds may be compared with that of 723,000 pounds in 1929.

### New Blister Rust Regulations Affect Montana and Oregon

A revision of the white pine blister rust quarantine regulations, governing interstate movement throughout the United States of white and other five-leaved pine trees and currant and gooseberry plants, adds to the list of states and counties designated as infected with the white pine blister rust, the state of Montana and those parts of Oregon not heretofore designated. It went into effect June 5, 1930.

Other modifications based on changes in the blister rust situation in the course of the last two years include: Further restrictions on the movement of currant and gooseberry plants to cover leaves of these plants; removal of certain restrictions on Christmas trees not passing westward across the Mississippi valley quarantine line; modification of sanitation requirements applying to New York and the New England states; inspection and certification provisions for nurseries shipping five-leaved pines to generally infected states; removal of five-leaved pines from Oregon and Idaho only when grown from seed under certain sanitation requirements.

### Admit Russian Lumber Cargoes

Shipments of lumber recently arrived from Soviet Russia were permitted to enter after special action by the Treasury Department.

They had previously been held by custom officials because of the understanding that convict labor had entered into the production of the logs or the manufacture of the lumber. The tariff law authorizes an embargo against importation of goods produced by convict labor. Until the results of further investigations are available similar shipments will be allowed entry.

Announcement of the action by the Treasury Department was made July 8, by Assistant Secretary Seymour Lowman after representatives of the International Paper Company, the Amtorg Trading Company and the Dutton Lumber Company called to protest the possibility of a refusal of entry of several shipments of Russian lumber that had arrived in American ports. In addition to two cargoes belonging to the Dutton Lumber Company held up in ports, four other ships loaded with lumber from Russia to the United States were on the seas.

### Park Executives Meet in Missouri

The American Institute of Park Executives will hold its convention at St. Louis, Missouri, September 29-30, October 1-2, at the New Jefferson Hotel. Fred W. Pape is chairman of the committee on the convention.

### Senate Committee to Study Wild Life

Members of the Senate Committee on Conservation and Replacement of Wild Life Resources will visit the upper Mississippi Wild Life Refuge, the Superior National Forest, Minnesota, and the Jackson Hole elk country, Wyoming, during the next two months to obtain information on the needs of game, fish, and bird life. Senator Walcott, of Connecticut, chairman of the committee, has announced that he hopes much progress in the conservation of wild life within these several projects will be the result of the studies to be made. Accompanying him on the trip, which in places will require the use of a pack train for days because of the lack of roads, will be Senators Hawes, of Missouri; Pittman, of Nevada, and McNary, of Oregon.

### Florida Farm Survey Reveals Advantages of Unburned Land

The survey of farm and timberland of Washington County, Florida, made by Dr. Zeigler and Mr. Spillers of the Southern Forest Experiment Station, and Mr. C. H. Coulter of the Florida Forest Service, revealed that scorched and stunted trees were found on eighty-five per cent of the forest lands. The "light burning" custom had destroyed seeds and seedlings, causing blank spaces in the forest and, in some cases, extensive areas of idle land. In two areas where land has not been burned over for from six to fifteen years, the value of timber, sapling growth, soil and forage, is two to three times greater than on the farm woodlots which were burned annually.

### Barnes Leaves Geographic Board

Will C. Barnes has resigned as secretary of the National Geographic Board. Author, soldier, and stockman, Mr. Barnes plans to travel and to write. Before going on a trip around the world, he and Mrs. Barnes will spend two or three months in Phoenix, where he will complete a history of Arizona.

### Bird Refuges Acquired in South Carolina and Colorado

The first bird refuges to be acquired by purchase under the Migratory Bird act of 1929, by which Congress authorized the expenditure of nearly \$8,000,000 over a period of ten years, have been approved by the Migratory Bird Conservation Committee. They are in South Carolina and in Colorado. One comprises 32,555 acres in the Cape Romain region, Charleston County, on the Atlantic Seaboard, and the other 5,180 acres in the San Luis Lake region, Alamosa County, Colorado. Specialists of the Biological Survey examined and appraised both areas from the standpoint of food resources for wild fowl and other conditions, and found them to be ideal bird refuges.

### Summary of Game Laws Available

In order that sportsmen may be fully informed as to the correct open hunting seasons and other important hunting and fishing regulations, a summary of federal, state and provincial game laws has been made

by the Bureau of Biological Survey. It is known as the Bulletin on the Game Laws for the Season 1930-31 and free copies are available.

### "Save Iowa Soils" Slogan Urges Planting to Prevent Erosion

Professor I. T. Bode, Extension Forester at Ames, Iowa, reports extensive plantings of willow and black locust to hold Iowa soils against erosion. The willow is planted in moist situations and along ditches; the locust is used on poor, dry, clay soils and on the tops of ditches and gulleys. To date nearly fifty demonstration plantings for erosion control have been established in nineteen Iowa counties. The work is being forwarded under the slogan "Save Iowa Soils."

In addition to these plantings, the nursery at the Iowa State College has distributed to farmers nearly twenty million trees, most of which are spruce and pine. These helped in the establishment of sixty-two new planting demonstrations in eleven counties, and continued planting work on more than two thousand demonstrations previously established in thirty-two other counties. The trees for these demonstrations were furnished by the state nurseries at Ames. Professor Bode reports that Iowa now has between 650 and 700 tree planting demonstrations of various types distributed in eighty-nine out of ninety-nine Iowa counties.

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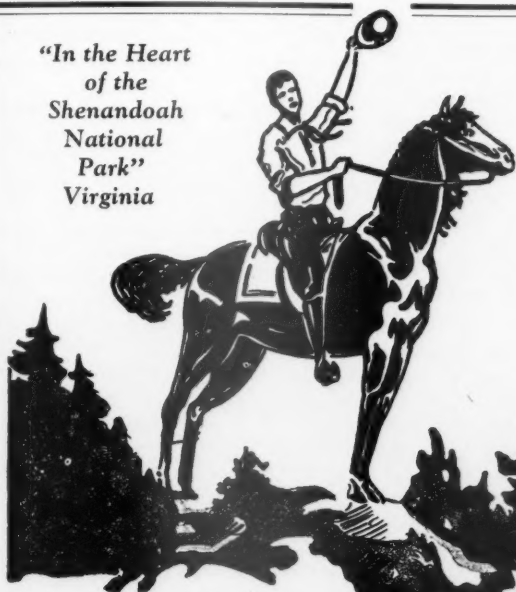
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# Ask the Forester?

Each Month Forestry Questions Submitted to the Association Will Be Answered in This Column. If an Immediate Reply is Desired a Self-Addressed, Stamped Envelope Should Accompany Letter.

QUESTION: What value has well rotted manure to deciduous trees?—C. E. M., New York.

ANSWER: In addition to small amounts of plant food contained in the manure, authorities agree that one of its chief functions is to furnish materials upon which desirable bacteria may work. These bacteria make plant food within the original soil as well as in the manure more readily available to the tree roots. Manure serves also as a mulch and when worked into the soil serves to keep it loose, thus helping to conserve moisture. There seems to be no reason to believe that the benefits of well rotted manure are limited to deciduous trees.

QUESTION: What deciduous trees might be harmed by an application of manure or liquid manure?—C. E. M., New York.

ANSWER: No deciduous trees are likely to be harmed by a reasonable application of well rotted manure, or by liquid manure. It is possible to fill the soil so full of manure that some of the by-products of decomposition may be harmful to the roots. It is also possible to put so much liquid manure in a local area to result in "salt injury." Neither of these sources of injury will occur under economical methods of handling fertilizers.

QUESTION: While in Louisiana, Mississippi and Alabama I was greatly shocked at the apparent lack of effort to provide for reforestation or avoid serious fire conditions. What is being done about it?—A. W. A., Illinois.

ANSWERS Each of these states has a State Forester and an organization for cooperating with private owners for protecting forest lands and for forest planting. A recent report from the Forest Service shows that Alabama receives \$42,090 of Federal money and secures from state or private sources an additional \$43,430; Louisiana receives \$40,930 from Federal sources and \$88,041 from state and private sources; and Mississippi \$35,656 from the Federal Government and \$37,589 from the state and private timber holders. The American Forestry Association is cooperating in Mississippi in an educational campaign against forest fires which

has been described in this magazine. These three states have over fifty million acres of forest land needing protection from fires, which will cost more than a million dollars to protect satisfactorily. This presupposes Federal appropriations of about one-fourth this amount. At the same time each state has a forest nursery and distributes trees at cost for forest planting. Extension foresters working in cooperation with the State Forester and the county agricultural agents help farmers with their forest problems.

QUESTION: What is the fastest-growing tree in North Carolina?—J. A. P., North Carolina.

ANSWER: According to State Forester J. S. Holmes, loblolly pine is the fast-growing timber tree in the forests of North Carolina. It will reach commercial maturity under average conditions in thirty-five to fifty years.

QUESTION: Are there any northern hemlock and hardwood forests in Minnesota such as are in northern Wisconsin and Michigan?—C. H. S., Jr., Wisconsin.

ANSWER: Minnesota has a few isolated hemlock trees, but no commercial stands. The best development of hemlock is in northeastern Wisconsin and the northern Peninsula of Michigan. Northern hardwoods consisting of hard maple, yellow birch, basswood, elm and beech occur locally in Minnesota, but the type is not widespread or typical of conditions in the state. The hardwoods are of poorer quality than those of Wisconsin and Michigan, which usually occur in mixture with hemlock and white pine.

QUESTION: Is not standing pine at the present time selling for one-half the price that it was, say twenty or thirty years ago?—J. C., New Hampshire.

ANSWER: According to figures compiled by the United States Forest Service the average stumpage price of New England white pine was \$4.00 per MBM in 1900, \$6.50 per MBM in 1910 and \$10.00 per MBM in 1920. Figures for 1930 are not complete, but on the basis of census schedules received and examined, the stumpage price for 1930 appears to have dropped approximately to what it was in 1910.

# Book News and Reviews

**STRUCTURE AND LIFE OF FOREST TREES**, by Busgen and Munch, published by John Wiley & Sons, 436 pages, illustrated. Price \$7.50.

A translation by Thomas Thomson of the work of Dr. M. Busgen, Professor in the Royal Prussian Forest Academy in Münden. It has been revised by Dr. Munch of the Forest Academy at Tharandt. The book is remarkable for its thorough discussion of all of the physical features of the trees. It is replete with references to the work of plant physiologists and foresters in all parts of the country.

The logical sequence and presentation and the carefully prepared index make of the book a valuable reference for foresters, botanists and plant students. It is a book which can not be read easily by those who are not familiar with botanical terms. It should serve as an excellent textbook.—G. H. C.

"Growing Black Locust Trees," by Wilbur R. Mattoon, U. S. Forest Service. Farmers' Bulletin No. 1628—A sixteen-page bulletin describing black locust and the means by which it can be reproduced by planting. The bulletin also includes a description of the locust borer and the locust leaf miner, which are the two principal enemies of this tree.

**ROAMING THE ROCKIES**, by John T. Faris, published by Farrar & Rinehart, New York. 331 pages, illustrated. Price \$3.

A fascinating description of the natural wonders of the National Parks and Forests, portrayed in all their majesty and grandeur. Mr. Faris loves these regions and writes with the power only possible in one whose heart is filled with his subject.

One picture follows another with bewildering rapidity and leaves the reader awed with the majesty and beauty of the stupendous scenes pictured; glaciers and mountains that are breath-taking; deserts in colors that cannot be reproduced; Indians, naturally picturesque, with their legends and elusive, wailing, expressive music; wild life in their natural haunts, protected yet free; a wealth of unexplored scenery; the mystery of unbeaten paths; high spots of history—all of this and more is contained in this book of the Rockies.

Horace M. Albright, Director of the National Park Service, says: "When a book on

the National Parks and other recreational areas of the Rocky Mountains can arouse interest and even enthusiasm among those whose lives are devoted to National Park work, it has to be good. 'Roaming the Rockies' stands up under this test."—P. V. G.

The historic Mont Alto and Michaux State Forests, embracing 64,000 acres in the South Mountains of Pennsylvania, between Gettysburg and Chambersburg, are described in a new publication of the Department of Forests and Waters, entitled "A Guide Book to Forestry Studies and Demonstration on the Mont Alto and Michaux State Forests."

**THE LIFE STORY OF BIRDS**, by Eric Fitch Daglish. Published by William Morrow and Company, New York. 236 pages, illustrated. Price \$3.

Fascinating text and exquisite woodcuts, the latter done by the author, prove him to be an artist and writer as well as a naturalist of distinction. Mr. Daglish tells of the coy courtship in the spring, describes odd homes and common nests, explains the why of the color scheme of eggs and plumage, discloses the early life and training of bird babies, what constitutes a bird meal, and reveals their enemies and the reason for their migrations.—A. W. H.

**THE HUNTING OF THE BUFFALO**, by E. Douglas Branch. D. Appleton and Company, New York and London. 240 pages, illustrated. Price \$3.

A colorful and historical narrative of the hunting of the buffalo. From Indian legends, old letters, diaries, and travelers' tales of the frontier days, the author has woven an exciting epic story of the slaughter that all but exterminated the American bison.—E. K.

"The Classroom Guide of the Book of Knowledge," published by the Grolier Society, New York.—This super-index, of which Ellis C. Persing is editor-in-chief, is part of the new school edition of the "Book of Knowledge." It is designed especially for school teachers, more than 500 subjects being described and outlined as special lessons or projects. The purpose of each particular subject of study is set forth, followed by numerous questions. If more than one copy of the index is needed, additional copies can be purchased for \$3.99.

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LANDSCAPING THE HOME GROUNDS, by L. W. Ramsey. Published by the Macmillan Company, New York, London, and Canada. 166 pages; illustrated. Price \$2.

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Love for plants and flowers is not sufficient to create good landscaping, he holds, for beauty must be expressed in relation to things about it in order to indicate that the home-maker has given as careful consideration to the outside, which every passer-by sees, as has been devoted to the interior arrangement and furnishing of the home.

Beginning with the plan on paper, which he considers of utmost importance, embodying as it does provision for satisfying every requirement of use and beauty, Mr. Ramsey, by the use of photographs, drawings, and text gives advice on the location of the house, and arrangement of the gardens, walks, and drives. He gives directions for the city home on the small lot, for the more extended suburban situation, and for the country estate. He plans the "outdoor living room," flower and vegetable gardens, service areas, and the "public lawn." He makes clear the difference between formal and informal landscaping—A. W. H.

## Governor's Conference Considers Public Domain

Governor Frank C. Emerson of Wyoming, speaking before the twenty-second annual governors conference at Salt Lake City on June 30, called attention to the backgrounds of the present public-land policy of the Federal Government. He referred to the President's special commission and urged that title to these public lands be transferred, in fee simple, to the states. He declared that such action would encourage the evolution of a plan which will allow the public-land states to work out their own destinies, unhampered by conditions now prevailing in relation to the Public Domain.

## New Member Appointed to Oregon Forestry Board

A. R. Watzek, of the Crossett-Western Lumber Company, Portland, Oregon, has been appointed a member of the Oregon State Board of Forestry by Governor Norblad. Mr. Watzek will serve as the representative of the Oregon Forest Fire Association.

## Fifty Thousand Dollars for Butterflies

President Hoover has submitted to Congress a supplemental estimate for an appropriation of \$50,000 to enable the Secretary of Agriculture to purchase a collection of moths and butterflies collected by the late Dr. William Barnes, of Decatur, Illinois. This collection contains approximately 473,000 specimens, covering all the families of moths and related insects occurring in North America. It has been carefully catalogued and is so valuable that frequently entomologists of the Department of Agriculture have traveled to Decatur, to examine and compare specimens in the collection. When acquired by the Government, the collection will be housed in the National Museum of the Smithsonian Institution.

## Topographic Map of Country To Be Completed

That the geodetic work of the Coast and Geodetic Survey in the Department of Commerce may be increased, President Hoover in a recent communication to the Bureau of the Budget, announced a program which calls for the completion of the topographic mapping of the United States in the next eighteen years. The appropriation bill covering funds available to the Department of Commerce for the fiscal year beginning July 1, 1930, carries \$316,624 for geodetic operations. This represents an increase over the appropriations of the previous year of \$88,600, and will make possible the renewal of observations on the variation of latitude and the continuation of the topographic mapping.

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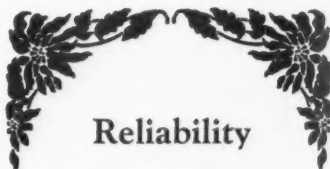
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## The First State Forest Research Institute Is Opened in Pennsylvania

THE formal opening, on June 5, of the Pennsylvania Forest Research Institute located on the Mont Alto State Forest, one of the oldest and best developed State Forests in America, marked the culmination of a forestry program of more than half a century and the beginning of a new era of forestry in that state. Pennsylvania has the distinction of being the first state to maintain an institute of forest research.

The importance of the occasion was shown by the attendance of 300 friends of forestry, among whom were the official representatives of the United States Forest Service, of the forestry and conservation departments from

with other states, the national government, and foreign governments. Its forest research program calls for a constant, cooperative contact between the research and the practicing forester, and research studies will be promoted and selected in such a way that their conclusions can soon find their way into forest practice.

Recognizing that the primary requirement for the improvement of forest practices is more complete and more accurate information about forests and their social and economic relation to everyday life, the Institute will collect carefully and correlate accurately a substantial body of valuable forestry



About 300 foresters and friends of forestry participated in the afternoon field trip at the opening of the Pennsylvania Forest Research Institute.

neighboring states, and of educational and research institutions, and the forestry personnel of the Pennsylvania Department of Forests and Waters.

Ovid M. Butler, Executive Secretary of The American Forestry Association, attended the meeting and extended the congratulations and good wishes of the Association. The program included addresses and greetings in the morning, and a tour of forestry study plots and operations on the Mont Alto and Michaux Forests in Franklin County in the afternoon.

Joseph S. Illick, State Forester, whose recommendations and efforts were instrumental in obtaining the state institution, said that its purpose is to bring about the betterment of forest practices on all types of forest land in Pennsylvania and that it is hoped that its sphere of helpful services will extend beyond the boundaries of the commonwealth.

The Institute will cooperate with agencies of the state government, with associations, corporations, and individuals within the state,

knowledge. In addition to collecting information, it will also publish reports, exchange information, hold conferences, conduct forest journeys, train research workers, and help apply the knowledge it accumulates to the practice of forestry.

Subjects on the preliminary working program of the Institute are: Forest, nursery, forest tree planting, natural reproduction, inferior tree and inferior wood problems; the chestnut blight, white-pine blister rust, forest tree insects, deer damage to forest trees, approved cutting methods, seed testing and certification, and biology of the forest; forest types, special tree, growth and yield, and forest soil studies; wood using industries, and a survey of forest resources.

Although the headquarters are located apart from the central administrative offices of the Pennsylvania Department of Forests and Waters, and the administration is independent of any forest school, the Institute is an integral part of the state organization. It has been organized on the plan found suc-

cessful abroad, that of separating research from administration and instruction duties.

The Pennsylvania Forest Research Institute is founded on the premise that it is neither a luxury nor an experiment, but that it is a sound business investment that will pay increasing dividends in service to the people of Pennsylvania.

The Honorable Charles E. Dorworth, Secretary of the Pennsylvania Department of Forests and Waters, presided at the meeting which was held to mark the opening of the Institute. The principal addresses were made by Earl H. Clapp, Assistant For-

ester of the United States Forest Service, and Joseph S. Illick, State Forester of Pennsylvania. Greetings were extended by Judge Watson Davison of Pennsylvania, Ovid Butler, Executive Secretary of The American Forestry Association, State Forester H. S. Newins of West Virginia, Russell T. Edwards, of the American Tree Association, Harris Reynolds, Secretary of the Massachusetts Forestry Association, W. R. Hine of the Society of American Foresters, and Ralph S. Hosmer, head of the Department of Forestry of Cornell University. Willis M. Baker, Director of the Institute, responded.

## Conservation Legislation in Congress

### Shipstead Bill Passes

THE Shipstead bill, S. 2498, amended to apply to all public lands within an area of two million acres in and adjacent to the Superior National Forest in northern Minnesota passed the House on July 3. The amendment was accepted by the Senate without discussion, and the bill was signed by President Hoover on July 10.

During an extended discussion of the bill on the floor of the House of Representatives no opposition was voiced. Representative Nolan, who introduced the companion bill in the House, described it as a conservation measure in the best sense that the term implies. He referred to the similar territory north of the Canadian border which has been set aside as the Quetico Provincial Park, and expressed the hope that in the near future these two areas may by international agreement be combined into a great recreational center for both nations. Representative Nolan declared that the law reinforces the Forest Service policy maintaining a proper balance between the larger national uses of the forest for recreation and the private demands for commercial utilization. It will also guard the lake land against further damage by power developments.

Representative Letts reviewed the history of the area since 1909 when President Roosevelt set aside the Superior National Forest, the outer boundaries of which embrace about 1,500,000 acres. At present about 850,000 acres have been acquired by the Federal Government, while 26,800 acres are included within the Public Domain outside of the National Forest. These were withdrawn from entry by executive order while the bill was under discussion. The bill as passed applies only to Federal lands within a gross area of some 2,000,000 acres. As expressed by Representative Letts the bill recognizes the recreational uses of the lakes and streams within the Superior National Forest and seeks to perpetuate their islands, waterfalls, and wooded shores for national use and enjoyment.

Representative Scott Leavitt described the beauty of the area as he knew it twenty-one years ago when he was a ranger on the Superior National Forest. He emphasized the fact that before permits can be granted to construct dams, Congress itself must act. The law takes away from the Federal Power Commission or any other Federal Agency the right to permit the permanent raising of water levels to the destruction of the shoreline, until Congress itself acts in the matter, and decides what should be done in the public interest. Mr. Leavitt declares this to be a conservation measure of utmost importance, preserving the last wilderness area of this character existing in the United States.

Congress adjourned without taking action upon several other bills of outstanding importance for forestry and conservation. These bills all retain their place on the calendar and may be taken up after Congress convenes for the short session beginning December 1, 1930.

The passage of the Shipstead-Nolan bill adds to the already long list of important conservation legislation passed by the Seventy-first Congress. The several appropriation bills carry over thirty million dollars for the National Forests, National Parks, Indian Forests, and for cooperation with the states in protecting privately owned forest land. The Forest Service will receive during the present fiscal year nearly three million dollars more than last year, while the road-building program on National Forests has been increased by \$3,500,000.

An increasing amount of planting on National Forests is assured by the passage of the Knutson-Vandenberg bill, which authorizes annual appropriations starting with \$250,000 for planting trees on denuded acres within the forests. The maximum amount of \$400,000 will be reached after three years. Because this does not adequately meet the needs of the National Forests the hope has been expressed in various quarters

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that the law may be amended after a year or more to authorize larger appropriations. During the present fiscal year, beginning July 1, 1930, there is available \$225,000 for planting on the National Forests.

Efforts were made during the early months of the present session to secure the passage of an enlarged program of forest purchases under the Weeks law comparable to the announced desires of the National Forest Reservation Commission. In response, however, to the President's appeal for economy Senator McNary and Representative Clarke made a new draft of their bills and submitted them to their respective houses. The outcome was the new Clarke-McNary law authorizing appropriations of \$3,000,000 for the two fiscal years succeeding the present one. The National Forest Reservation Commission is working under an appropriation for the current year of \$2,000,000, and efforts have been started to assure the appropriation of \$3,000,000 for next year.

The five-year construction and maintenance program passed for the Bureau of Fisheries authorizes additional appropriations for stations, laboratories and means of fish distribution to cost \$1,885,000. New construction and expansion is planned in practically all parts of the country.

Chief among the conservation bills to be considered when Congress again convenes is the Englebright bill, H. R. 3245, and its counterpart introduced by Senator McNary, S. 3594. This latter passed the Senate on June 2. The Englebright bill has been described frequently in AMERICAN FORESTS and FOREST LIFE. It would authorize appropriations of \$4,500,000 with which to construct and maintain improvements for the more effective protection of the National Forests from fire. Published hearings held before the House Committee on Agriculture are

available. These are supplemented by a comprehensive statement by Representative Englebright published in the Congressional Record for July 7. The House Committee on Agriculture has declined to make a report on the bill, which precludes any action by the House. Chairman Haugen has implied that the bill will be considered early in December.

On June 27, the Senate passed S. 4586, authorizing \$200,000 for the purchase of land for the National Arboretum in the District of Columbia. Pressure of work in the House made it impossible to bring this bill before that body for action. This appropriation is necessary to complete the area on which the proposed National Arboretum will be developed.

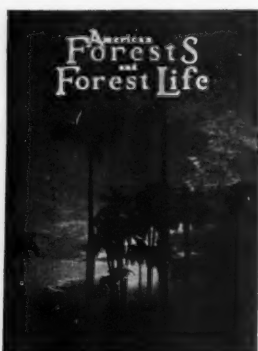
Representative Leavitt's bill, H. R. 8529, to create the Yakima Indian Forest on the Yakima Indian Reservation in the State of Washington, passed the House on June 23. This is one of four bills of a similar nature providing Indian forests on the Colville Indian Reservation in the State of Washington, the Klamath Indian Reservation in Oregon, the Warm Springs Indian Reservation in Oregon, and the Yakima Indian Reservation. They are of recognized importance and the passage of one will serve as a demonstration to help in the early passage of the others.

No action has been taken since April 7 on the Norbeck-Andresen bill for the protection of the American eagle. On that date the Senate passed S. 2908, but the House Committee on Agriculture has not reported upon a similar bill, H. R. 7094, introduced by Representative Andresen of Minnesota.

The Hudson bill, H. R. 10625, to control oil pollution of navigable waters, remains in committee but has been promised action early in the December session. Although this bill

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is before the Committee on Rivers and Harbors, it is of particular importance to sportsmen because of the disastrous effects of oil films upon waterfowl and fish life.

The reorganization of the Federal Power Commission carries potentialities of great importance to the future of the National Forests and National Parks. The Couzens law provides for the appointment of five Commissioners to replace the three Cabinet officers who formerly worked with an executive secretary to administer the work. The new and larger force of engineers will make necessary new plans for cooperation between the Power Commission and such important bureaus of land administration as the Forest Service and the National Park Service.

Two official groups created during the past session carry great responsibilities, and their reports will be read with interest. First of these is the President's Public Domain Commission whose Chairman is Charles R. Garfield, former Secretary of the Interior. The other is the special Senate Committee to investigate wild-life problems. Senator Walcott of Connecticut is chairman of this committee. The recommendations of these two groups are expected to have a real influence upon future legislation.

Of equal importance with these are the possibilities held by the National Timber Conservation Board, which the President has promised to appoint. The problem of over-production faced by the lumber industries was presented to President Hoover on April 30 by a group of conservationists and lumbermen led by a representative of The American Forestry Association. The personnel of the board has not yet been announced.

### Cronemiller Appointed Oregon State Forester

Lynn F. Cronemiller has been appointed State Forester of Oregon to succeed Frank A. Elliott, who died at his home in Salem, Oregon, on June 11. Appointment of Mr. Cronemiller was announced by the State Board of Forestry on June 20. Previous to his appointment Mr. Cronemiller had been Deputy State Forester since 1924. He is a graduate of the Forest School of the Oregon State College of Agriculture, and was several years with the United States Forest Service and with private lumber companies.

Mr. Elliott had served as State Forester of Oregon since 1911 when the department was created. He was sixty-four years old and was well known among foresters and lumbermen.

Theodore Rainwater has been appointed Deputy State Forester to succeed Mr. Cronemiller, and Porter King has been placed in charge of forest-fire protection activities.

### Job Takes Job in Virginia

Henry K. Job, lecturer, author and photographer of wild life, has been appointed Director of Education for the Virginia Commission of Game and Inland Fisheries with

headquarters at Richmond. Mr. Job is also editor of the *Game and Fish Conservationist*, whose first number under his direction is that for May-June, 1930.

### Tariff on Wood Products

The Hawley-Smoot Tariff Bill, signed by President Hoover on June 17, carries the following items which pertain to forest products. Turpentine and rosin which were free under the Fordney-McCumber Tariff now bear a 5 per cent ad valorem tax; wood tar and tar oil from wood carries a duty of 1 cent a pound; logs of cedar, fir, spruce and western hemlock, which were formerly taxed at \$1 a thousand, are now admitted free; while maple flooring, which was formerly admitted free, now bears an 8 per cent ad valorem tax. Hewn timber, sided or squared, carries a \$1 a thousand duty. The rate on birch and alder plywood, most of which comes from Russia, has been increased from 33½ per cent to 50 per cent ad valorem.

Maple sugar and syrup, which comes entirely from Canada in competition with our own product, formerly bore a duty of 4 cents a pound. Sugar now is taxed at 8 cents a pound and maple syrup at 5½ cents a pound.

### Eberly Accepts Federal Position

Howard J. Eberly has resigned as Assistant Forester in Oregon to become Regional Inspector for the United States Forest Service cooperative activities in the Southern States. Mr. Eberly's headquarters will be in New Orleans, from which he will supervise the Federal financial cooperation in the protection of state and privately owned land from fire in the states of Oklahoma, Alabama, Mississippi, Louisiana and Texas.

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### Increased Growth Justifies Fire Protection in Alabama

Growth data, compiled in Alabama by field crews of the James D. Lacey Company to ascertain if the increased rate of growth resulting from fire protection has been sufficient to justify the protection expense, reveal that the diameter and height growth rate had increased from 20 to 40 per cent, depending on site conditions and the size of the trees. Another equally important result observed was that volunteer young growth had almost completely restocked the entire area. In making studies of this kind increment borings and stem analyses are taken on sample plots spaced at systematic intervals along guide lines run across all portions of the property to insure representative results for each site condition and age class.

### Forest Planting in Oregon

The Oregon Forest Nursery, situated near Corvallis, distributed 195,850 tree seedlings during the past year. This represents about 75,000 more than have been shipped during any previous year. The principal species include black locust, green ash, Chinese elm, western yellow pine, Port Oxford cedar, and Douglas fir. Shipments were made to lumber companies as well as to farmers.

### Connecticut Council Recommends Funds for Forest Fire Fighting

State Forester Austin F. Hawes reports that Connecticut's Forest Fire Council has recommended an appropriation of \$25,000 for the construction of fire lines in the state forests and an additional \$10,000 for the purchase of new equipment for fighting forest fires. The Council also recommended that the pay to patrolmen, which is now at the rate of 40c an hour, be changed to permit the payment of a more adequate sum.

### White Plains Watershed Asked for Nature Sanctuary

That the watershed of White Plains, New York, comprising more than four hundred acres, be declared a nature sanctuary was recently requested of the White Plains Common Council by the White Plains Unit of the Westchester County Conservation Association, the Garden Section of the Contemporary Club, the White Plains Garden Club, the White Plains Realty Board, the North Broadway Citizens' Association, and the White Plains League of Women Voters. The matter was referred to the City Planning Commission for further study and report.

At present the watershed area is closed to the public and is used by the city for collecting and distributing water for municipal use. Use as a sanctuary would encourage native plants, birds and animals which are now scarce. Plants that have become extinct in the region could be replanted.

### The Forest Was His Studio (Continued from page 502)

On two of these trips to England he was accompanied by his wife. She often went with him on trips through the country to solicit subscriptions.

In 1840 he left England for the last time and thereafter lived with his wife and sons in a beautiful home on the Hudson River not far from New York. For several years he was busily engaged in preparing a smaller edition of his works in seven volumes. He was so delighted with the success of his books that he decided to produce a work entitled *The Quadrupeds of America*. He was assisted in gathering the material by his sons and the Rev. John Bachman, of Charleston, South Carolina. A large number of the animals were painted by his son John, while nearly all the landscapes were painted by his son Victor.

The old gentleman planned a trip to the Rocky Mountains in quest of new material, but his friends persuaded him to give it up on account of his advanced age. The first volume was issued in 1846, and the last one in 1854, after his death. Mrs. Audubon died at Shelbyville, Kentucky, in 1874.

Previous to the death of this celebrated artist, many honors were conferred upon him. He was a Fellow of the Linnaean and Zoological Societies of London; Natural History Society, of Paris; Wernerian Society, of Edinburgh; Lyceum of Natural History, of New York; Society of Natural History of Manchester; Royal Scottish Academy of Painting, Sculpture and Architecture, and numerous other organizations.

It is time for the present generation to get acquainted with John James Audubon. His work is well worth studying.

### The Oldest Known Petrified Forest (Continued from page 493)

stumps are now found indicates rapid deposition of sediments, hence rapid destruction and burial of the trees.

The Gilboa trees have also a more high sounding technical name, not very terrifying however, when its meaning is known. Since it has proved to be a seed fern, and the oldest seed fern known, it has been christened *Eospermatopteris*, meaning "dawn of the seed fern." Seed ferns represent a group of plants standing in position between the tree ferns, which are true ferns, and the higher seed plants, and they differ from true ferns in the possession of seeds instead of spores and in the higher organization of the trunk. This group, while leading higher, has itself become extinct, vanishing from the earth millions of years ago.

In general appearance the Gilboa trees must have resembled the tree ferns of the tropics and subtropics and also of the ancient Carboniferous and Upper Devonian times. As already pointed out, these trees grew along a low swampy shore. They probably reared themselves to heights of from twenty-five to forty feet and bore at the summit of



the trunk a crown of fronds six to nine feet long and bearing at their tips the seeds and male fructifications or spore-bearing organs. As shown by the stumps, these trees possessed a bulbous base undoubtedly buried in the swampy mud for some distance as the roots were not heavy and otherwise would not have given adequate support. The roots are long and strap-like and radiate from the margin of the base, in some cases at least nine feet long and probably much longer. The fossil stumps show that there was some variability in size and shape. Some of the stumps narrow quite gradually from the bulbous base into the trunk, others very abruptly. The trunk itself tapered very gradually. The structure of the interior of the trunk at present is not definitely known. The outer cortex is the only structure of the stumps and trunks that is to any extent preserved, the structures of the interior having been washed out and the cavity left filled with sand which has helped to preserve the shape of the stumps in fossilization. The outer cortex consists of interlacing strands of strengthening tissue arranged so as to form a network—*textilis* type—or more or less parallel—*erianus* type—and it is upon this character that the separation into two types or species is based. The fronds or leaves were compound, with three divisions and have been judged to have a length of six to nine feet from the fragments and larger specimens collected. The leaflets, or *pinnules*, were bilobed, with the lobes slightly recurved, thin and veinless. The main stem varied from three-eighths of an inch to five-eighths of an inch in width in the larger fronds. The seeds of this Upper Devonian tree were small and borne in pairs at the ends of forked branchlets, probably near the tip of the frond. The male fructification or spore-bearing organs were similarly borne.

The foliage of these trees was not heavy, of a much looser type than in the tree ferns of today and the leaflets were far apart. There could have been no dense shade in this primitive forest; except, perhaps, for the heavy moist atmosphere sunlight could easily filter through. No higher forms of animal life were in existence, fishes—possibly amphibians or salamander-like forms—representing the highest types of the time. There was no hum of insects heard for they had not yet come into existence. Could we have lived in that ancient forest all the sounds that would have reached our ears would have been sounds from the near-by sea and the murmuring of the breeze in the tree tops, perhaps at times the howling of storms. Three times forests such as this crept down to the shore of the swampy coast and undaunted reared themselves in all their glory; three times in succession were they cut down by the encroaching sea, buried under the rapidly accumulating sediments and finally fossilized.

A life-size restoration of the fossil forests of Gilboa now holds a prominent place in the entrance hall of the State Museum. There is an idealized reproduction of the Gilboa area, showing the fossil stumps at the three horizons. The Schoharie Creek occupies the center foreground, with its tributary, the Manorkill, joining it at the left in a series of falls. Looking across this fossil section, representing the conditions at the time of discovery, one sees the painting of our vision of the forest as it might have looked in the height of its beauty. Mingled with the seed-fern trees in the forest are a few trees of the *lycopod* type, the so-called club mosses. At both sides of the painting are life-size restorations of the Gilboa tree, merging imperceptibly into the painting. So the Gilboa forests, after millions of years, in a certain sense, live again.

Within the last two years has been written the final chapter in the history of these ancient trees. Through the courtesy of the New York City Board of Water Supply and the interest and help of engineers connected with the work, the State Museum has set up in the vicinity of the quarry in lower Gilboa, an outdoor exhibit of a collection of these fossil tree stumps with adequate explanatory labels telling their story to all those who in passing by care to pause for a time and read.

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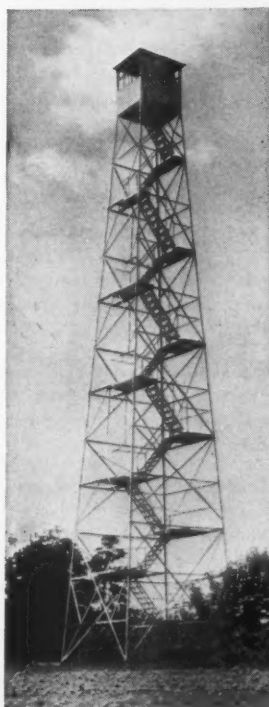
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## The Dude Trail

(Continued from page 496)

summer ranges, elk and deer are fenced off the rangers' haystacks by white-painted, horizontal poles around the domestic pasture so that herds as they run may not be injured in a barbed-wire entanglement.

While many novices outfit at first, according to cowboy tradition, in our one national costume—ten-gallon hat, chaps, spurs, beaded vest and fringed buckskins—they soon become trail wise and wear the red, white and blue of bandanna, blouse and jeans, after the style of the lean and lank Indian at the rodeo. According to an expert outdoor stylist, what the girls are wearing now are incredibly short, suede-leather divided skirts, with three or four-inch slashes on the lower edge to make a sort of fringe—with straps and buckles on the side.

After all, the dude industry is not a new one, but a modernized-standardized expression of the oldest use of the forest, when woody grounds were set apart for the royal chase.

Looking beyond the physical freedom of the high places, one recognizes, too, the present-day expression of the spirit of the covered wagon in his quest of new horizons where all men are the same to the fishes.

## Planning The Mountain Cabin

(Continued from page 505)

dishes and perhaps a sink. Occasionally, especially in the better-appointed cabin, there will also be a real bathroom, fully equipped, but in most cases, even in the fairly pretentious abode of this kind, there will instead be only a small lavatory or washroom, possibly with shower-bath facilities.

Whether the cabin is to be equipped with running water will, of course, depend on the possibility of being able to tap a suitable water supply. In providing such convenience, it will be necessary to include the necessary plumbing equipment at the time of building, and perhaps arrange for including a tank somewhere in the attic or on the roof for storing water. Such equipment further entails the provision of a means of drainage—possibly into a cesspool. The cooking and lighting problems will, in most instances, be handled on primitive lines—a wood or gasoline stove for the former and kerosene lamps or candles for the latter.

A mountain cabin, to the person who loves the outdoors and who likes occasionally to get away from the bustling city, is a source of inestimable enjoyment. It also invites to healthful living. If it be, by good fortune, located in proximity to good fishing and hunting, so much the better.

## "WHO'S WHO" AMONG THE AUTHORS IN THIS ISSUE

E. S. CHENEY trailed in the wake of a migratory-minded father over the plains of the Dakotas, through the forests of the Lake States, and eventually to the Pacific Coast, where he is now associated with the Division of Fish and Game of the California Department of Natural Resources.

"My brother and I edited and published a magazine devoted to natural science," he writes, "illustrating it with wood block cuts of our own fashioning, doing the printing ourselves in father's printing office. Then I chanced on a camera, and behold—in the combination my life work was found."



E. S. Cheney

H. O. BISHOP is a noted writer and research specialist of Washington, D. C., and has been engaged in newspaper work in that city for a number of years. He has written extensively of the historical romance of the nation.

MARGARET HAYDEN MARCH-MOUNT has been associated with the United States Forest Service for the past ten years, serving in Wyoming and in the Lake State region. Her present headquarters is Milwaukee, Wisconsin.



M. H. March-Mount

She is a native of Illinois but migrated to the Pacific Coast early in life. For a while she was associated with the Department of Agriculture at Washington, D. C., and during the World War was engaged in vocational educational work. Aside from devoting two years as secretary of the Cody Club she has served as its publicity director.

WINIFRED GOLDRING is Associate Paleontologist of the New York State Museum and is the author of a publication dealing with the famous Gilboa fossil trees.

FRITZ SKAGWAY, a native of northern Michigan, grew up among the lumberjacks and river hogs, he says, in the pine and hardwood forests at the head of the Au Sable River. Always an observing student of nature and wild creatures, he writes that he "lives only to visit my log cabin on the shore of Guthrie Lake near my birthplace, making occasional forays into Alaska, British Columbia and the Arctic to fish and hunt."

F. J. CLIFFORD is an outdoor writer who lives what he writes. He has explored most of the Northwest, part of the time in company with his troop of Boy Scouts. He is the designer of a flag, a green fir on a white background, which has been adopted in many regions of Oregon and flown on special forestry occasions. He makes his home at Medford, Oregon.

CHARLES ALMA BYERS is a well known writer on scientific, technical and popular subjects, and makes his home in Los Angeles, California. He writes: "I was born on a farm in eastern Kansas, graduated from common schools and attended college for a short time. I quit to become a country editor in Missouri, was nominated for office of County Clerk and became a bombastic political orator. Met defeat at the election, despite my own first vote, and quit politics. Ran a newspaper syndicate for three years, handling mostly travel stuff, before settling down in California and to my writing."



Charles A. Byers

GEORGE D. PRATT, of New York, is President of The American Forestry Association and one of the foremost forest conservationists in the nation. He was formerly Commissioner of Conservation for New York State.

F. F. FRANKLIN is a professor of forestry at Purdue University, Lafayette, Indiana.

L. G. GRAY, in charge of fire weather field work in California for the Weather Bureau of the United States Department of Agriculture, since 1926, was graduated from Stanford University in California in 1925. Now a Junior Meteorologist, he writes that he has climbed fifty-two mountain peaks in California in connection with his work—and likes it.



L. G. Gray

EINO SARI is Professor of Forestry at the University of Helsinki, Finland; ISABEL LIKENS GATES is a writer and poet of Washington, D. C.; ALFRED G. CLAYTON is a Forest Ranger on the Washakie National Forest, in Wyoming; and G. H. COLLINGWOOD is Forester for The American Forestry Association.

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